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ORIGINAL ARTICLES.

INTESTINAL CASTS: WITH THE REPORT OF A CASE.

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A DISEASE upon which a century of American medicine has brought forward but a dozen writers, is of sufficient rarity and interest to claim our careful study and investigation. Until Da Costa published his article on membranous enteritis in the *American Journal of the Medical Sciences*, in 1871, American physicians, with but one or two exceptions, did not seem to have recognized the disease as a separate and distinct ailment.

The earlier cases occurred in England and on the Continent, but in the last decade the cases seem to be about evenly distributed between England and America; about this time a disease similar to the one under consideration was described in the lower animals by Th. Clemens and Engesser, who relate cases occurring in cattle, the membranes in one of the cases[1] measuring fifteen feet in length.

An unfortunate chaos in the nomenclature undoubtedly has done much to retard the study, classification, and correct interpretation of this somewhat rare disease. Almost every writer on the subject has advanced a name different from any title given to the before recorded cases, for example: Tubular looseness or diarrhœa tubularis;[2] chronic pseudo-membranous gastro-enteritis;[3] follicular, duodenal, and clonic dyspepsia;[4] fibrinous diarrhœa;[5] chronic pellicular inflammation of the intestinal mucous membrane;[6] chronic croup of the intestines;[7] mucous disease of the colon;[8] chronic muco-colitis;[9] mucous disease[10] and membranous enteritis;[11] painful affection of the intestinal canal;[12] pseudo-membranous enteritis;[1] intestinal desquamative catarrh;[2] a membrane-like affection of the bowels;[3] intestinal cast.[4]

I feel that Good, in styling the disease tubular diarrhœa, is more nearly correct, as by so doing he advances no theory which would endeavor to explain the condition. By using the title which heads this article we simply express the condition as we find it—*i. e.*, an intestinal cast—not endeavoring by our nomenclature to cover the pathogeny and etiology of the affection as so many writers have unsuccessfully attempted. Perhaps in no way can a better understanding be had of the disease than by recording our case.

Susan H., aged thirty, light mulatto woman of good physique, weight one hundred and fifty pounds, married nine years ago, had one child, born last May (1884), made a good recovery. No miscarriages or history of uterine complaint. Has always enjoyed good health, is neither nervous nor hysterical, and gives no history of a hereditary taint of any kind. November, 1884, she suffered from a severe attack of dyspepsia, after which first passed an intestinal cast which was quite *fourteen* inches in length, and dark in color,[5] it was thought to be a worm, and patient was treated accordingly; since November has frequently passed casts, suffers no pain during or preceding passage, says that in last six months has passed a "bucketful" of them. No colic, tumefaction, or diarrhœa—in fact, bowels must be kept regular by the use of medicines. Blood never occurs in the discharges. Feels a sensation of "something moving" before cast is expelled; the passage of the casts has been almost constant for the last six months, not occurring in paroxysms. Patient says that she feels well, and were it not for the anxiety that her condition causes her, would consider herself in perfect health.

The disease is generally seen in hysterical women, or hypochondriacal men who have suffered from dyspepsia and its concomitants. A few cases have been reported as occurring among children.[6]

Most reporters say that the disease is characterized by attacks of abdominal pain, followed by discharges of the casts; our case suffered neither before nor after the discharge, although, as above stated, some of the casts were fourteen inches in length. Regarding the frequency of the discharges, there may be but a

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[1] Med. and Surg. Hist. War of Rebellion.
[2] J. Mason Good. The Study of Med., cl. 2, ord. 2, species 7. Phila., 1825, vol. i. p. 162.
[3] Roche, Sanson et Lenoir. Nouv. Elements de Path., Paris, 1844, t. i. p. 512.
[4] T. J. Todd. Cyl. Pract. Med., Am. Rept., Phila., 1845, vol. i. pp. 653 and 663.
[5] John Grantham. Facts and Obs. in Med. and Surg., Lond., 1849, p. 203.
[6] J. Y. Simpson. Obstet. Mem. and Cont., Am. Rept., Phila., 1855, vol. i. p. 279.
[7] John Williams. Dublin Quart. Journ. Med. Sci., 1864, vol. xxxviii p. 459.
[8] Andrew Clark. Lancet, Dec. 17, 1859, p. 614.
[9] S. O. Habershon. Ibid., Jan. 4, 1868, p. 7.
[10] Walter Whitehead. Brit. Med. Journal, 1871, p. 143.
[11] Amer. Journ. Med. Sci., Oct. 1871, p. 321.
[12] Powell, Trans. Col. Phys., London, vol. iv.

[1] Cruveilhier, Anat. Path. Gén., t. ii. Laboulbene, Récherches sur les affec. pseudo membraneuses, 1861.
[2] Com. on Morbid Growths, Phil. Path. Soc. Trans, 1876–77, vol. viii. p. 37.
[3] F. W. Goss. Boston Med. and Surg. Journal, 1881, p. 27.
[4] James F. Goodhart. Trans. Path. Soc., London, 1872, xxiii. p. 98.
[5] Specimens were sent for microscopic examination by Dr. Walter F. Atlee, through whose kindness I was enabled to see the patient several times.
[6] H. D. Chapin. Arch. Pediat., 1884, i. 447–49.

single discharge or they may be almost continuous, as the case we are considering well illustrates. A fact worth noting is the almost entire lack of emaciation notwithstanding the quantity of matter passed. During the intervals of the attack, diarrhœa may be present or the bowels may be constipated; tenesmus is frequently a symptom complained of bitterly by the patient.

Subjects of this disease, while not emaciated, will generally present evidences of malnutrition, as shown by furuncles, carbuncles, sore mouth, and irritable nervous system. The bladder may or may not present symptoms; it generally does, however, in females.

Da Costa (*loc. cit.*) records a case in which the patient could predict an attack with certainty; the premonitory symptoms were blueness of nails, tingling or pain at tips of fingers, and a sense of chilliness.

Hess[1] had under his care a married woman aged thirty-two, who had had two miscarriages and one child at full term; dyspepsia and constipation, alternating with diarrhœa, had existed several years before the patient came under observation. She passed pieces a foot long; every passage for five or six weeks contained these casts. She never passed any blood. Appeared to know when the pieces became loose, as she could feel them moving their entire course through the intestinal canal.

Fish[2] noted the case of a woman aged forty, in whom constipation and uterine disorder preceded the expulsion of the membranes. No blood was noted at any time; patient passed membranes about twice a week

In the cases recorded by F. W. Goss,[3] habitual constipation was a marked symptom; one patient had exacerbations of the disease lasting one, two, and three months, passed a substance that looked like a tangle of "white wet string." In another case a similar discharge from the vagina accompanied that from the bowels. The membranes have been noted a quarter of a yard in length. In his third case some of the membranes had a dark colored central fibre running through them, that was as difficult to sever as a wire. All the cases were females, and about or above middle age.

Whitehead[4] remarks that, out of one hundred cases, *only four* occurred in males; on the whole, females seems to offer a predisposing diathesis; at all events, cases are more frequent among women.

In the *New York Medical Record* (1882, ii. 33–36), we find the case of Mrs. N. recorded, which presents a point of some interest in the fact that she suffered great pain during the attack; the seat of the greatest pain was a spot a little above the umbilicus; the discharges in this case were very offensive.

That physicians and patients may occasionally be mistaken in this disease, witness the following cases. Quekett (Rich. Quain, Ibid.) describes the case of a woman who at intervals of a fortnight or three weeks, had paroxysms of abdominal pain, which were relieved on passing a quantity of membranous matter and tubes, the mass of which sometimes exceeded an orange in size. This mass represented the undigested portion of mutton chops, which had constituted the meat diet of the patient. He states that he has observed *nine* cases of this character.

Corrigan[1] found the substance passed to consist of yellow elastic tissue, resembling the ligamentum nuchæ of sheep. Cases are sometimes met in which hemorrhage becomes a prominent or alarming symptom.

Van Valzah[2] noted a case in which the matter passed was not unlike "boiled macaroni." "There is a long history of nervous disorder, a peculiar skin disease, derangement of the sense of sight, irregular uterine function, dyspepsia, high-colored urine, intestinal disorder terminating in distinct attacks of pain accompanied by characteristic discharges from the bowels;" the pain now comes on at regular intervals, relieved with the appearance of the discharge. There was also increased mental activity, and a severe hemorrhage (melæna), the amount of matter discharged was marked and persistent.

I cannot better describe the macroscopic and microscopic appearance of these casts than by quoting from the admirable article of Goodhart.[3]

Material consists of: 1st, an elongated network of roundish cords; 2d, white, opaque, solid masses of some inches in length, with small secondary folds on their surfaces, all of which are arranged parallel to the long axis of the mass; 3d, small flocculent pieces of semi-translucent membrane, which, even by naked eye, may be seen to have a corrugated or reticulated arrangement.

The more solid fibres, at their free ends, and on the unattached edges of the secondary folds, oftentimes merge gradually into a perfectly clear and colorless jelly which is hardly visible when placed in water. The cone-like networks have the most consistence, but all three varieties are so delicate as to allow of but very little manipulation out of water.

Microscope: Under two-inch objective, surface is seen to be composed of opaque and translucent parts, the former apparently as round ridges, marking off the latter into regularly arranged hexagonal or polygonal crypts. Under a higher power these crypts are still visible, though much less well defined. These appearances are best seen in the small flakes of membrane, less distinctly in the larger masses, but not in the networks. They appear to be due to the formation of mucus and epithelial matter, either upon the surface of or in contact with some follicular mucous membrane.

The mouths of the follicles on the surface of the cast, when compared with the mucous membrane from a healthy piece of large intestine, present the following differences. They are much larger in the proportion of two or three to one, while the intervening tissue forming their wall is much less. There is also much less structural arrangement in the cells forming the walls in the membrane passed, and while in the healthy gut distinct basement membrane exists, no such membrane can be seen in the casts.

Under the least pressure all the specimens break up immediately into isolated collections of cells, these being of various shapes and sizes; but the greater number

[1] Med. and Surg. Reporter, 1880, 42.
[2] Ibid., 1880, p. 417.
[3] Boston Med. and Surg. Journal, 1881, pp. 27, 505.
[4] Med. and Surg. Reports, Manchester Hospital, 1870.

[1] Dub. Hosp. Gaz., 1854–55, vol. i. p. 38.
[2] Amer. Journ. Med. Sci., July, 1873, p. 106.
[3] Casts from the Intestines. By James F. Goodhart. Trans. Path. Soc. London, 1872, xxiii. p. 98, with 3 illustrations.

are elongated and blunt at one end, having the appearance of disintegrating columnar epithelium. On making a section vertical to the surface, and being careful to make no pressure with the cover-glass upon the specimen, indistinct pieces of tubes or their moulds may here and there be seen, but only once or twice were these very distinct. All stain deeply with carmine, in inverse proportion to their opacity, gelatinous parts staining most deeply. Chemically, all are dissolved by alkaline solutions, by strong hydrochloric acid and heat.

It becomes interesting to inquire into the pathology of the affection, but at the outset we are met by an extremely meagre literature, but few post-mortems of the disease having been recorded. Simpson mentions a case, seen by Abercrombie, in which the mucous membrane of the colon was covered by an immense number of small spots of a clear white color, which were vesicles that, when punctured, discharged a small quantity of clear fluid. This patient had suffered from phthisis, and had passed a large quantity of "membranous casts or tubes."

Da Costa is of the opinion that the affection is not originally an inflammation, but considers the inflammatory element as the result rather than as the cause, and would attribute the true etiology to the nerves presiding over nutrition. In Wright's case the mucous membrane of the colon and lower portion of the small intestine was studded with a thickly set papular eruption.

The colon seems to be the seat which the disease elects; this, however, is not the invariable rule. The middle period of life also seems to be the age at which the passage of intestinal casts most frequently occurs. Again, however, this is not without exceptions; as has been stated, a few cases have been met with in children.

The existence of diarrhœa tubularis may always be determined if ordinary care is taken; it may be mistaken for dysentery and fatty discharges; again, it has been mistaken for worms. In diphtheria the intestines may be attacked by diphtheritic membrane, and the casts passed per rectum. An extremely interesting case showing how diphtheria may present casts of a portion of the alimentary tract, is recorded in a late number of the *Amer. Journ. of Med. Sciences.*

In pyæmia, scarlet fever, puerperal fever, and tubercular disease, a membrane is sometimes deposited and cast off. These are cases of "secondary croup of the intestinal membrane."[1] The prognosis is not good; many cases, however, run a prolonged course, as in the patient of Broca,[2] whose disease lasted fifteen years. Very acute cases occasionally make a complete recovery; this unfortunately is a rare exception instead of the invariable rule. The treatment, as one would suppose, is extremely unsatisfactory. It is well, however, to endeavor to ward off attacks, to prevent the reformation of membrane, and to treat symptomatically during the persistence of an attack. During the acuteness of a paroxysm, opium is perhaps the drug that will best meet the indications. Belladonna, Dover's powder, bismuth, and counter-irritation all have their advocates.

During the remissions a suitable diet is the most important part of the treatment. The patient must take plenty of outdoor exercise, and the skin is to be kept active by baths and massage. Abdominal counter-irritation is to be persisted in for a long time over the course of the colon, as in many cases we find tenderness in this region.

Fowler's solution is, in some cases, a very happy remedy. Strychnia may also be exhibited. Habershon recommends nitro-muriatic acid, henbane, and vegetable infusions; Clark,[1] nux vomica and copaiba; and Whitehead, the bromide of potassium; Cumming[2] advises the use of the battery in quarter-hour daily *séances.*

The following drugs have also been used with more or less transient success: Turpentine, iron, cod-liver oil, oxide and nitrate of silver, muriate of ammonia, sulphate of zinc, tar water, chlorate of potash, corrosive chloride of mercury, blue pill.

Purgatives are distinctly contraindicated; when the bowels become sluggish and constipated, as they are apt to do, only mild laxatives should be administered.

[1] Ramberger, Krankheiten des Digestions Apparatus, p. 418.
[2] Bull. Soc. Anat, Paris, 1854.

[1] Lancet, Dec. 1859.
[2] Lond. Med. Gaz., 3d S. vol. ix.

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ACUTE OPTIC NEURITIS OF RHEUMATIC ORIGIN.

TWO CASES—ONE MONOCULAR.

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ACUTE and chronic inflammation of the optic nerve is one of the most frequent intraocular affections met with in ophthalmic practice. It is, however, by no means confined to the practice of the ophthalmic surgeon, as an enumeration of its causes, and the diseases of which it is a complication or a symptom will indicate. West (*Trans. Ophth. Soc. of Great Britain*, 1882–83) reports twenty-two cases due to injuries of the head and intracranial diseases; Burnett and Oliver (*Amer. Journ. Med. Sci.*, 1884), a case of monocular optic neuritis in which, while the neuritis was subsiding into atrophy, general ataxic symptoms were manifest; Sharkey (*Oph. Soc. Great Britain*, 1884), a case of acute optic neuritis with absolute blindness in four days followed in six weeks by paraplegia with anæsthesia, incontinence of urine and feces, cystitis, peritonitis, and death; Eulenberg (*Neurol. Centralb.*, No. 15, 1884), a similar speedily fatal case. Gower (*Med. Ophthal.*, 2d ed.) describes optic neuritis as occurring in chronic cerebritis, cerebral hemorrhages, softening, abscess, tumors, inflammations and tumors of meninges, rarely in cerebro-spinal meningitis, diseases of the cranial bones and orbit, injuries to the head, myelitis, renal inflammation, leucocythemia, acute and chronic menstrual irregularities, "common in syphilis as a secondary disease, but is very rare as a primary syphilitic affection, if it ever occurs." In speaking of rheumatic influences he says, "Neuroretinitis has been loosely ascribed to rheumatism, but only on the ground that it has sometimes appeared to be due to cold. It must be remembered that the optic nerve, like the other orbital nerves, may be damaged by rheumatic inflammation at the back of the orbit." As other causes he cites lead and other intoxicants, typhus, typhoid, scarlet fever, measles, variola, erysipelas, and diphtheria.

In an inaugural dissertation (Berlin, 1885) Max Haadel reports nine cases of acute optic neuritis, some monocular, occurring under such circumstances that exposure to a draught of air was the most frequent cause. Absence of albuminuria, diabetes, syphilis, lead, and other forms of intoxication, was shown in every case. Leber (Gräfe and Saemisch, *Handbuch*, S. 814) relates the case of a gunner who, in three days after prolonged exposure from standing in deep cold water, was entirely blind from optic neuritis; also of a country postman, exposed by the nature of his calling to all weathers, who suffered from rheumatic monocular optic neuritis. Arlt (*Augenkrankheiten*, Bd. iii. S. 159) speaks of a man who, after hard dancing, exposed his perspiring body to a draught, suffered gradual loss of vision, followed in four years by central symptoms; he quotes Holscher, who records the case of a healthy woman, twenty-two years old, who took a severe cold, rapidly became blind, and died in seven days; Makenzie, the case of a young woman who, while perspiring freely, thrust her hands into cold water—she had a chill, skin became dry in a moment, and in fifteen minutes she was blind; and another of blindness supervening in twelve hours after exposure.

Two cases are reported by Beer (*Lehre der Augenkrankheiten*, Wien, 1792, B. ii. S. 51), and quoted by others, in which the exposure was the indirect and suppression of menses the direct cause of the neuritis: a girl, eighteen years old, one morning in winter, during her sickness, walked with bare feet on the marble floor of the kitchen. In ten minutes she could not discern the brightest light. After the menses were restored, the vision was entirely recovered. In the other case vision was lost during six months from the same cause, and returned after the menses were reëstablished.

Some allowance must be made for the cases which were reported prior to the days of the ophthalmoscope. The above, however, are all plainly instances of amaurosis from acute inflammation of the optic nerve.

CASE I. *Monocular.*—Mrs. A., a strong, healthy-looking woman, consulted me on June 8, 1885, on account of defective vision and pain. She had worn R. and L. —4 for eight years, for distance only, with moderate comfort. Three weeks ago she began to complain of a constant, deep-seated pain in the eyeballs, and of occipital headache. Ophthalmoscope showed myopia —3, and vertically oblong disks.

Fundus healthy. R. V. $\frac{10}{cc}$; L. V. $\frac{15}{cc}$.

Thinking her pain and headache caused by wearing au improper corrective, I ordered a laxative pill, and dubois. sulph., gr. j–℈j, to be instilled into the eyes to paralyze the accommodation. The patient was to return next day for measurement of refraction. The following week she was kept at home by a very sore foot—a corn which had become inflamed, resulting in an abscess. On June 18th she complained that two days before the sight of the right eye had become very dim. I found vision reduced to counting fingers at three feet; pupil dilated and immovable (duboisia?); media clear, optic nerve moderately swollen, outlines of disk lost, arteries normal, veins tortuous, no hemorrhages. Field not limited. Left eye normal and remained unaltered. She was ordered to bed in dark room; copious local bloodletting. Hydrarg. chlor. mit., gr. $\frac{1}{12}$, until salivation. The vision sank until all light perception vanished, and remained so for forty-eight hours, then commenced to return, and in seven days was entirely restored.

R.—2.50 = $\frac{20}{XX}$. L.—2.75 = $\frac{20}{XX}$.

On closely questioning the patient, and being able to exclude all known diseases and poisons, only two possible causes could be discovered. On a very hot night, between her first and second visits, she had lain, thinly clad, on the floor of her bed-chamber;

and upon rising felt that she had taken cold. The other and less likely cause may be found in the suppurating corn. Just what connection exists between the corn and the optic nerve of the other side is hard to define, yet the relation of cause and effect is not impossible. Arlt (*op. cit.*) assigns the application of leaves of rumex to the feet to stop sweating in an old man as the cause of his neuritis; and Beer relates a case of absolute blindness caused by suppression of a purulent discharge from ulcers on the feet, cured by reëstablishing discharge by means of mustard plasters.

CASE II. *Double.*—A healthy man, aged thirty-one, occupation switchman on a railroad, consulted me December 2, 1885. For past ten days had severe frontal headache, followed, during last three days by rapid loss of vision; otherwise perfectly well, and no history of syphilis. R. V. counting fingers at one foot; L. counting fingers at two feet. R. field limited on nasal side; L. not limited. Both disks swollen. R. = 3 D.; L. somewhat less; no hemorrhages; pupils dilated but responsive. Ordered home to bed; blisters on each temple; hydrarg. chlor. mit., gr. $\frac{1}{12}$ every hour. In two days all light perception was lost, except at extreme temporal side of R. field; pupils widely dilated and immovable. L. nerve swollen equal to right. For four days this condition remained unchanged. The patient was now completely under the influence of mercury without the slightest improvement. He was next bled freely from the arm, and *while the blood was flowing from the vein the perception of light and large objects returned.* Profuse sweating, by infusion of jaborandi, further improved the vision. The next two weeks he took potas. iod., gr. xv, hydrarg. chlor. corros., gr. $\frac{1}{18}$, four times daily.

Jan. 6.—V. = $\frac{20}{L}$. Patient then disappeared, but it may be presumed vision became fully restored.[1] On the day of last examination both backgrounds were normal. The swelling had subsided, exudation absorbed, and disks regained their healthy color. On the first examination the vision was so bad that nothing decided could be learned of the color perception or condition of accommodation. No albumen and no sugar in urine. The cause in this case was probably exposure.

The pathology is decidedly obscure. Arlt, in the autopsy of a case which died of paralysis four years after the optic neuritis, found the envelopes of the brain greatly congested and tense, and, when opened, "emptied eleven and one-half cupfuls of brownish-red dirty water from the side ventricles." In another, in which there were no other than ocular symptoms and death on seventh day, twelve to fourteen ounces of clear serum distended the ventricles. In Edwards and Lawford's twenty-two cases of neuritis complicated with injury and diseases of the brain in which the optic nerves were examined, the conclusion was reached that the inflammation of the meninges had extended to the sheaths of the optic nerves and thence into the nervous tissue through the fibrous network. The pathology most commonly accepted is a dropsy of the nerve sheaths. If Arlt had included the optic nerve in his examination, he would most probably have found the outer covering (dura mater) of the nerve widely distended with serum and the pia mater (neurilemma) and optic nerve compressed. Leber says, "The association of a high grade of this change (hydrops) with the above described brain affection (hydrocephalus internus) is an established fact. In all cases the hydrops was double-sided, but not equally developed on each side." This condition may suffice to explain double neuritis but hardly can be considered satisfactory in monocular cases. Here we can more readily believe that a true rheumatic inflammation of the fibrous coat of the nerve between the optic foramen and the sclerotic opening, exists, caused by exposure, and that the inflammation is attended with a free exudation of serum and perhaps fibrin producing sufficient pressure to induce papillitis. Such cases are seldom fatal, and our pathology is at best speculative.

The purely rheumatic cases—*i. e.*, those due to exposure to draught or otherwise subjecting an overheated body to a sudden lowering of the temperature are generally monocular (Leber). Hence the exciting cause is probably an acute inflammation in the course of the nerve anterior to the chiasm; other causes—suppression of menses, of a purulent discharge, of perspiration of feet, absorption of poison, etc.—develop double neuritis. The hydrops is double and due to an abnormal collection of serum within the brain membranes.

Limitation of the field and peculiarities of loss of color perception are of little diagnostic or prognostic worth. The blindness comes on so suddenly and advances with such rapid strides that V. is lost before the patient is seen, or is so bad that the boundaries of the field are extremely uncertain. The diagnosis is at once decided by the ophthalmoscope. It shows through the clear media the engorged disk, its site marked only by exit and entrance of bloodvessels, its outline lost. A few small hemorrhages may be found, but they are rare, and no white patches of degenerative or choroidal atrophy are found. The pupils are dilated moderately or widely, and either not at all or only slightly responsive to light. The accommodation is presumably abolished. The sixth nerve may be involved in the paralysis.

The termination in the two new cases was recovery. It is not, however, always so favorable. In general the prognosis depends upon the site of the lesion and not on the degree of the amaurosis. When the hydrops is limited to the infraorbital part of the nerve the prognosis is favorable. When it is secondary to hydrocephalus, the patient either dies or recovers with partial or complete amaurosis.

In the treatment unanimity of opinion prevails—it consists in vigorous antiphlogistics; local and general bloodletting; the preparations or the alkaloid of jaborandi; mercury carried to salivation,

[1] Patient reappeared April 12th, on which day I made the following note in my case book: V = $\frac{20}{XXX}$ pty. Both nerves whitish, and small vessels absent; edges of disks moderately well defined. No patches in choroid or retina. Field and color perception normal.

and potassium iodide. I would especially call attention to the improvement of vision in my second case during the venesection.

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A RARE FORM OF MULTIPLE SARCOMA.

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JOHN P. T., white, a native of the United States, married, a cabinet-maker, aged fifty-two years, admitted to Presbyterian Hospital July 4, 1884, had always been well until six years ago, when he first noticed a tumor, painless, and about the size of a marble, on the posterior and right side of the neck; this gradually grew, and when it was as large as a hen's egg, nineteen months ago, he was admitted to the Jefferson College Hospital, and it was removed by Dr. Allis; unfortunately no record of its microscopic character was preserved. The operation wound soon healed, and he remained well until four or five months ago, when he discovered a small tumor on the left side of the neck in the submaxillary region, and soon after another over the right pectoral muscle. On admission both tumors were found to be movable and not deeply seated. Their removal was advised, to which patient consented, but as he did not seem to be in very good condition, he was first given tonics, stimulants, and nourishing food.

He improved rapidly, and on the 23d of July the tumors were again carefully examined, when it was found that seven other tumors had developed. They varied in size from a filbert to a goose egg, were painless, superficially situated, and freely movable. The smaller growths were covered by normal skin, which was freely movable over them; as they increased in size they became adherent to the skin, and as they grew larger the cutaneous capillaries over them enlarged, and as they still further enlarged the skin over them gradually thinned and ulcerated.

The tumors were situated as follows: One in left submaxillary region, one over right chest anteriorly, one in right groin, one over body of each scapula, one over right buttock, two over left buttock, and one about the middle of the back. The one in the left submaxillary region had broken down, and bled easily on the removal of the dressings, as had also the one on the right buttock.

On the 24th of July, the submaxillary tumor, the tumor over the right buttock, and the one in the middle of the back, were removed; they were all superficially situated and encapsulated, and there was no hemorrhage of any consequence. The wounds were irrigated with a bichloride of mercury solution—1 to 1000, and dressed with lint soaked in a solution of the same strength. The tumors were all removed by circular incisions. The wound in the neck gaped widely, and was allowed to heal by granulation; the edges of the others were approximated by sutures, and they healed almost by the first intention.

On the 10th of August, seventeen days after my first operation, another tumor was found to be developing in the right temporal region. It was painless, and the patient did not know of its existence until his attention was directed to it. On the 13th of August, the tumor over the right pectoral region, which had now attained the size of an orange, was removed; it presented the same characteristics as the previous ones, and at the same time a smaller tumor the size of a hickory-nut which was situated about two inches below the outer extremity of the right clavicle was removed. Also one the size of a large orange from over the right scapula. The wounds were united by silk sutures, and treated as before, with equally good results. On the 28th of August, a new tumor was discovered near the lower and posterior border of the right axilla.

On the 30th of September, I again removed three more tumors with an enlarged inguinal gland. One tumor was in the right inguinal region, was the size of a large apple, and after its removal through a longitudinal incision, there was removed from beneath it, and through the same incision, an enlarged lymphatic gland about the size of a walnut. The second tumor was the one in the right temporal region before alluded to; it had increased considerably in size, was more deeply situated, and was immovable. Some difficulty was experienced in removing it, as its capsule was thin, adherent to the bone, and ruptured while being enucleated. It had to be extracted piecemeal; its contents were soft, of brain-like consistence. The third tumor was over the left buttock, and about the size of a fifty cent piece. After this operation the patient had some slight constitutional reaction, and the right eyelids and side of the face were considerably swollen for several days, but the maximum temperature reached was 100°, and he rapidly convalesced.

On the 17th of October, the patient developed malarial symptoms, and his general health began to decline. The tumors continued to increase in size, new ones were constantly developed, and at the time of his death, on February 20th, there were seventy-nine tumors scattered over the surface of his body.

Post-mortem examination seventeen hours after death, by Dr. H. F. Formad. Body greatly emaciated, skin very anæmic, and subcutaneous adipose tissue nearly all atrophied. The subcutaneous tumors have increased in size and number, and protrude as variously sized tubers upon the surface of the body. They are all covered by unimpaired skin. In size they vary from that of a pea to that of a large fist, the smaller ones predominating. Total number of neoplasms counted, seventy-nine. All the tumors appear as distinctly encapsulated nodes moderately firm in consistence; on section, white in color and yielding a clear blood-tinged juice upon being scraped with a knife. The tumors that had been formerly removed and had recurred were larger than the rest, and showed adhesions to the skin and surrounding structures and peripheral infiltration. The most conspicuous neoplasm was on the right temporal region and side of face, extending inward to the angle of the submaxillary bone. On dissecting it out, the base was found closely adher-

ent to the periosteum, the bone being eroded in some places. The upper edge of the zygomatic process was absorbed. All the tissues in the region between the bone and the skin were involved or absorbed by the new growth, which presented, when extirpated, an irregular shaped mass weighing thirteen ounces. The next largest tumor was extirpated from the left axillary space; it appeared to have developed from the fascia, and did not implicate the axillary lymph glands.

Thorax.—The pleural cavities contained, each, about three ounces of straw-colored liquid. A few old adhesions were noted at right apex. A small node of the new growth, about the size of a marble, was found in the parietal serous lining of the thorax in the third intercostal space on the left side near the spine. The bronchial and mediastinal lymph glands were enlarged, but did not appear to be infiltrated by the new growth. No tumor deposits could be discovered in the lungs; the latter were highly congested and œdematous, and somewhat hepatized in the lower lobes on both sides. The heart and pericardium were also free from tumor deposits.

Abdomen.—The liver is somewhat enlarged; weight, four pounds and five ounces. The left lobe of the organ was almost entirely replaced by a mass the size of a large fist, circumscribed, nodulated, and in other characters identical with the subcutaneous tumors. The right lobe of the liver was of normal appearance, but showed a few small nodes at the periphery, and on section exhibited a deposit of the size of a hen's egg in the interior. In the mucous membrane of the gall-bladder a flat deposit of the size of a marble was also found. About twenty pediculated masses of the new formation, varying in size, were found throughout and springing from the serous lining of the peritoneal cavity. The largest, in size corresponding to a hen's egg, was one hanging from the under surface of the diaphragm and wedged in between the latter and the liver. A number of these polyp-shaped deposits were attached to the omentum, the abdominal walls, the mesentery, and mesocolon, but it was not apparent that they involved the lymph glands. Some of the latter were merely hypertrophied to a moderate degree.

The kidneys were of normal size and appearance, but were the seat of numerous deposits of the new growth. Some of the nodes were located in the capsules of the kidneys, most of them, however, in the interior of the organs. A few hemorrhagic infarcts were noted in the cortex of the left kidney. Finally, some tumor deposits were found in the jejunum about its middle, springing from below the mucous membrane and protruding like mushrooms into the lumen of the gut. They were four in number, of the size of hickory-nuts, flat, and resting upon broad pedicles. Between two of the tumors the intestines showed a very perfect intussusception, which, from appearances, must have been of post-mortem origin. All the rest of the abdominal organs were normal.

The Brain.—No trace of tumor deposits, and no hemorrhage was observed. On examination of the base of the skull, it was found that the tumor described as involving the right side of the head penetrated through the right wing of the sphenoid bone, and a mass as large as a walnut was found inside of the dura mater, having forced its way from without into the cranial cavity.

Microscopical Examination.—A number of the tumors, and from all the various locations of the body were examined microscopically, and showed invariably the structure of spindle-celled sarcoma, large-celled variety. Their origin everywhere in the body was exclusively the connective tissue substances. The superficial neoplasms had taken their departure from the subcutaneous tissues and the fasciæ, those of the intestines from the submucous tissue, those of the abdominal cavity from the peritoneum, and those of the other parenchymatous organs from the interstitial connective tissue. The epithelial elements nowhere participated actively in the new formations. The mode of development and growth of the neoplasm has everywhere been originally a central one—*i. e.*, in the form of encapsulated nodes, though some of the tumors which had attained large size showed a peripheral growth by means of infiltrating the surrounding structures.

Remarks.—A close study of this case reveals some interesting and rather unusual features. The microscopical examination proved that every tumor in the body showed the structure of a pure spindle-celled sarcoma of the large-celled variety. It is, however, well known that the spindle-celled variety of sarcoma, although malignant so far as recurrence *in loco* after extirpation is concerned, does not give metastases to internal organs. Further, it is also known that tumor metastasis does not affect the skin, nor are malignant tumors known to travel from one part of the skin to another (unless by direct continuity and uninterruptedly). All the tumors in the internal organs in this case, as well as every one of the many isolated tumors in the subcutaneous tissue, must consequently have been of independent origin, and must have each started from independent foci of their own. Moreover, the tumors could not be traced to have spread either by continuity of structures or by the blood or lymph channels. It appears to be evident that we deal here with a tumor dyscrasia, viz., a case of true multiple tumor disease unusual especially for the spindle-celled variety of sarcoma, and not with the metastatic form of sarcoma.

SARCOMA OF THE ORBIT:

REPEATED REMOVALS; NON-RECURRENCE FOR EIGHT MONTHS.

BY D. C. COCKS, M.D.,

CONSULTING OPHTHALMIC SURGEON TO THE RANDALLS' ISLAND HOSPITALS, AND ASSISTANT SURGEON TO THE NEW YORK EYE AND EAR INFIRMARY.

I WAS invited by Dr. J. H. Fenner, on the 5th of April, 1885, to see a daughter of Mr. C., of Harlem, in consultation. The patient was about four years old; the family history revealed the fact that her grandfather had had a "sore" (epithelial?) at the inner canthus. Six weeks before (Feb. 1885), the family first noticed a swelling of the upper eyelid of

the right eye in the granddaughter, and it had gradually increased and now demanded attention.

Present condition: She is apparently in perfect health, and is well developed for her years. The left eye is normal in all respects. The right eye presents the appearance of ptosis, but the drooping of the eyelid is found to be due to a swelling under the upper eyelid. The eye is also forced downward and outward by the same agency. The movements of the globe are not limited by the size of the growth. Sight is normal. On palpation the growth is found to be a hard, bilobular tumor, movable in the orbit, unattached to the skin, and having slight if any adhesions to the orbital walls. It is the size of and has the "feel" of two small hazelnuts in juxtaposition. The density and rapidity of the growth gave indications of malignancy, and its immediate removal was advised.

The following day, chloroform having been administered, I made a horizontal incision one inch in length through the upper lid, about three or four lines above the upper border of the cartilage, down to the growth. As it had made a capsule for itself of the connective tissue of the orbit, I easily separated it from its connections in front with the handle of my scalpel and blunt hooks. A strong silk ligature was then passed through the tumor by which it was drawn forward, and the enucleation proceeded with. I succeeded in loosening the whole growth in this manner except at its upper border, where a fibrous attachment to the periosteum required the use of scissors.

The operation was done with antiseptic precautions, and the wound healed by first intention except at the inner angle, which required a few days for cicatrization to be complete. The tumor when removed was about the size of a horse chestnut, and was of the consistency of a fibroid on section. Microscopically it was pronounced by Dr. J. L. Minor (now of Memphis), and Dr. J. B. Campbell, of New York, to be a small round-celled sarcoma.

April 27. Patient can open the eyelid fully, but it is retracted at the inner angle.

May 5. Yesterday I noticed a hard and tender lump at the inner angle of the orbit. The lid is again slightly swollen.

6th. The new growth has the same feeling as the primary tumor. It is situated a little nearer the inner angle. A consultation being held, it was determined (taking into consideration the microscopical appearance of the primary growth and the rapidity of its redevelopment) that the new growth should at once be removed together with its periosteal attachments, and as much of the surrounding bone as was safe to take away.

Accordingly, on May 8th, assisted by Drs. Fenner, McLean, Peirce, G. H. Cocks, and by G. Marshall, D.D.S., I made an incision two inches long parallel to and just above the eyebrow, also one at right angle to this from the bridge of the nose up to the forehead for about one inch. These flaps were then dissected up and reflected respectively upward and downward, freely exposing the growth and its attachments. With the aid of a dental engine, a dental burr was used to cut through the periosteum and to make a groove two lines in depth around the growth (which was attached to the bone). I then moved the burr gradually from the periphery of the circle thus made toward its centre; as the burr advanced, it removed everything in its path for at least one-eighth of an inch below the periosteum. The growth and its base having thus been gotten rid of, I proceeded to remove all of the suspicious tissue in the vicinity and in doing so removed at least a square inch of periosteum from the roof of the orbit, the eye being depressed to allow the burr to enter the orbit freely.

All this having been done antiseptically, the edges of the wound were coaptated, and a pressure bandage applied, which was allowed to remain for one week. No reaction followed, and when the bandage was removed the wound was found to have healed throughout by first intention. A slight serous discharge, however, showed itself from the inner angle of the wound three days later, but lasted only about two days.

I felt at this time that I had thoroughly eradicated the diseased tissue, but in three weeks time the growth reappeared, and the following week was seen to project into the superior cul-de-sac of the conjunctiva. Then in view of its evident malignancy, and although the globe was not involved, I advised evisceration of the orbit, which was done in June. From this last operation the child made a good recovery, and remained free from any local recurrence until her death, which occurred in February, 1886, from pneumonia following measles one year after the growth was first noticed, and eight months after the evisceration of the orbit.

The points of interest in the case are:

1. The repeated recurrence of this orbital growth after apparently thorough removal of all diseased tissue.

2. Its non-reappearance after the removal of *all* the tissue that could possibly contain any disease germs.

3. Many will question the propriety of the removal of an eye when not involved in the disease, but I was and am convinced that in no other way could immunity be obtained *in this case*, as the second operation was as thorough and extensive as *I* could make without sacrificing the globe, and *it failed.*

4. Although the growth *might* have recurred had the child lived, it certainly was saved much suffering by its removal.

5. This case emphasizes the fact that recurrent growths in this region can only be successfully dealt with by the use of most energetic measures.

HOSPITAL NOTES.

ST. MARY'S HOSPITAL, QUINCY, ILL.

Service of DR. WILLIAM A. BYRD.

(Reported by Alexander F. Lee, M.D.)

INGUINAL COLOTOMY.

John W., colored, æt. forty years, was admitted to hospital December 12, 1885, suffering from some obscure hip trouble. For several months prior to his admission he had suffered from pain, gradually increasing in severity, in and about the left hip-joint. This he attrib-

uted to rheumatism, and he had been treated for that disease, but with no amelioration of the distressing symptoms. Had been having fever, varying in intensity, with occasional night sweats. There was also a history of rectal trouble. Tongue was considerably coated. Breath offensive. Appetite poor. Constipation alternating with diarrhœa, with some pain during defecation. On examination the left hip was observed to be considerably enlarged, emphysematous, and painful on pressure, with slight flexion and adduction of the thigh.

Perforation of the rectum was diagnosticated, the pus passing out of the pelvic cavity through the great sciatic foramen and burrowing into the hip. This caused irritation of the nerves and muscles of the hip, and accounted for the hip symptoms.

The patient was placed upon tonic treatment, and the following week several long and deep incisions were made into the hip, evacuating a large quantity of pus having a fecal odor. Considerable extremely offensive gas escaped at the same time with a hissing sound. For several weeks after this the patient improved steadily. The abscesses were washed out daily, and the tonic treatment was continued.

The improvement, however, was only temporary. The fever and night sweats recurring, the pulse being rapid and weak, the patient growing thinner and weaker, and the discharge from the abscesses becoming *feculent*, showing conclusively a communication with the bowel, it was determined, as a *dernier ressort*, to give the bowel rest, and permit the healing of the abscesses by performing colotomy.

January 30th, the patient was anæsthetized with a mixture composed of one part by measure of bromide of ethyl, three of chloroform, and four of alcohol. Believing inguinal colotomy preferable to lumbo-colotomy because the discharge coming out in front would be under better control of the patient and attendants, and would not be as irritating as at the back, an incision to the extent of about three inches was made one inch above and parallel to Poupart's ligament. Entering the abdominal cavity the sigmoid flexure was sought for, brought external to the opening, ligated, and divided below the ligature. The opening in the lower portion of the bowel was closed by sutures, and united to the inferior angle of the incision for future use. The circumference of the upper portion was now united by sutures to the edges of the incision, being careful to enclose the parietal layer of the peritoneum, thereby uniting peritoneum to peritoneum, and establishing an artificial anus.

The ligature was now removed, and the patient sent to his ward. Opiates were administered to prevent and control peritonitis. Since the operation there has been some peritonitis with the accompanying symptoms, hiccough, etc. The feces pass through the artificial anus and cause very little trouble or inconvenience to the patient. By means of a syringe passed into the rectum, not only is the rectum washed out but also the sinuses in the hip, showing an undeniable communication. The patient exhibits marked improvement and the abscesses are daily becoming smaller, with the probability of their soon closing.

Remarks.—As will be seen from the history of this case, there was considerable difficulty in making a diagnosis, and arriving at the true cause of the hip trouble. The patient had been treated for rheumatism; the same symptoms might have arisen from hip-joint disease or resulted from psoas abscess.

Knowing that there was a communication with the rectum, and that so long as the feces were permitted to pass through the bowel and out into the sinus, just so long would the bowel refuse to heal, and as a natural consequence the sinuses and abscesses in the hip also; knowing this, one principal object in the treatment must be attained, rest for the bowel. Rest was the *sine qua non*, and there was but one means of obtaining it for the requisite time—performing colotomy and compelling the feces to make an abnormal exit until the bowel could heal.

It is not the intention to leave the artificial anus permanently open. As soon as the abscesses and sinuses in the hip shall have healed, the opening into the bowel closed, and bowel attained healthy condition, then, and not till then will the artificial anus be closed, and the divided gut reunited. Of course, this necessitates a second operation, with the danger of peritonitis, etc., but the great benefit to be derived from closing the artificial anus and permitting the feces again to seek their natural channel, is sufficient argument in its favor.

MEDICAL PROGRESS.

SPARTEIN.—MM. LABORDE and LEGRIS, in an article entitled "La Méthode Expérimentale appliquée à l'Étude des Substances Médicamenteuses," published in the May number of the *Archives de Physiologie Normale et Pathologique*, come to the following conclusions concerning spartein. Spartein renders the heart-beats stronger and more protracted; its action on this organ is essentially dynamogenic and central in origin. Absence of alteration in pressure and of peripheral or vasomotor effects constitutes one of the important proofs, and is corroborated by other phenomena; among them those belonging to convulsions and asphyxiation, which indicate a predominant influence of the medulla oblongata and spinal cord. It must always be remembered that in frogs, a long time after actual death, even when the animal begins to dry, the heart beats rhythmically, as though spartein gave an impetus to the strength and length of the beats. MM. Laborde and Legris observed similar phenomena in newborn puppies. No other influence proceeding from the nervous system can be supposed to act in this case than that of intracardiac ganglia. The myographic researches made by these investigators have not at present furnished results that warrant decided conclusions.

The therapeutic properties of spartein were formulated by M. Sée, in his paper to the *Académie des Sciences*, as follows: It revives the heart-beats and the pulse; in this respect it equals in action digitalis and convallamarine, the alkaloid of lilies of the valley. As a tonic it is more active, more prompt, and more lasting It immediately regulates the rhythm in cardiac disturbance; in this effect it is superior to any other medical substance. In serious atonic conditions the heart-beats are quickened, and in this respect spartein resembles belladonna. The favorable modifications resulting from the action of spartein occur in one hour, or in some cases a few hours after its administration, and continue two or three days,

when its use is discontinued. During this time the general strength is increased, and respiration is rendered easier, but not so effectually as by potassium iodide. The urinary function is not influenced by such small doses as those hitherto used. The more recent researches made by MM. Laborde and Legris lead them to endorse M. Sée's statements, and they further state that the action of spartein is quicker and more rapid than M. Sée observed it to be. A daily dose of sulphate of spartein varies from five to twenty-five centigrammes.

The prompt action of spartein renders it invaluable in heart-disturbance requiring immediate treatment; in instances of asystolia its use is preferable to that of any other drug. In all cases of weak heart with asthenia, sulphate of spartein should be used, whether there be lesion or not. MM. Laborde and Legris declare that they do not know any conditions that should be regarded as indications against the use of spartein; it is not an accumulative substance in small doses, it does not exercise a deleterious effect either on the digestive organs or on the cerebrospinal system. It can be used for some time without an interruption being necessary. When digitalis is used, in the necessary intervals of administering it spartein sulphate may be given with advantage. In cardiac affections accompanied with dropsy, an infusion of broom-flowers added to spartein sulphate has a beneficial effect, acting as a diuretic. In cardiac dyspnœa, iodide of potassium may be used as well as spartein sulphate, and pyridin inhalations should also be administered.—*London Med. Record*, July 15, 1886.

ATROPINE POISONING.—KRATTER, in the *Vierteljahrsschrift für Gerichtliche Medicin*, XLIV., S. 52, contributes a long paper on poisoning by atropine, based on a study of eight cases in his own experience. The following are his conclusions:

1. The detection of atropine in the body is certain, provided proper methods of analysis are employed.

2. The urine is especially valuable for this purpose, since atropine is quickly absorbed and entirely excreted through the kidneys, apparently without undergoing change. It can be detected in the urine in cases which have not terminated fatally.

3. The examination of the pure crystalline residue in polarized light, though not conclusive, is to be recommended, since the crystals of the sulphate are sufficiently characteristic to render the detection of atropine in this way tolerably sure.

4. Positive proof of the presence of atropine is only to be found in its physiological action. The human eye is best of all for this purpose, since it is the most sensitive. The eye of the cat is also very sensitive.

5. Atropine shows great resistance to putrefactive processes, and can be detected in bodies which have been buried for some months.

6. Owing to the rapid elimination of atropine through the kidneys, the results of the chemical analysis are liable to be negative if the patient survive for some days.

FLÜCKIGER, in the *American Journal of Pharmacy* for April, 1886, p. 198, confirms the observation made by Mr. A. W. Gerrard in 1884, that the mydriatic alkaloids are possessed of quite exceptional alkaline power toward mercuric chloride, from the aqueous solution of which they precipitate mercuric oxide, the other natural alkaloids giving no precipitate at all with mercuric chloride, or, at least, in no case separating mercuric oxide.

Flückiger now makes the further observation that atropine, quite exceptionally, is able to impart a red coloration to phenolphtaleïn paper, thus contradicting the assertion made by him in 1884, that alkaloids generally were deprived of such an action. He has demonstrated that atropine is the only alkaloid (speaking, however, of the more generally used alkaloids) which displays the same action as the inorganic alkalies. This is a remarkable coincidence, and goes far to favor the suggestion that atropine must be peculiarly constituted, differing from other solid alkaloids, none of which, so far as we actually know, show the same behavior toward mercuric chloride and phenolphtaleïn. The author has also tried other coloring matters, and found them to be acted upon by atropine in the same way as by potash and soda. Atropine, therefore, has an alkaline power like the hydrates of sodium and potassium, differing in this respect from (probably all) other alkaloids. The author states, however, that mercurous chloride is not blackened by atropine as it is by the alkaline hydrates. Mr. Gerrard, *Ib.*, on the other hand, asserts that this statement is contrary to fact, and he has placed on record the experiments on which his assertion is based.

Flückiger describes modifications of the other tests for atropine. The original paper is referred to for details. It is to be borne in mind that phenolphtaleïn can be used in the identification of atropine only in the absence of the inorganic alkalies.—*Boston Med. and Surg. Journal*, July 29, 1886.

ALCOHOL IN HOSPITALS.—DR. DRYSDALE, leading physician of the Metropolitan Free Hospital of London, England, lately read a paper before the British Medical Temperance Association on the above topic, in which the following conclusions were prominent:

1. Alcohol is not a real food, but must be classed among the anæsthetics, in company with ether and chloroform; hence it ought not to be used as an article of ordinary diet.

2. The treatment of fevers by alcohol in large quantities is inferior to the treatment by cold and ordinary diet.

3. There is no clear proof that alcohol is changed into carbonic acid and water in the system; and, at any rate, part of it remains unchanged for as much as twelve hours in the system, irritating the internal organs.

4. Moderate amounts of alcohol neither raise nor lower the temperature, but excite the heart's action, and in some cases, in small doses, less than one ounce gives appetite.

5. In large and stupefying doses, alcohol lowers the temperature.

6. The amount of alcohol administered in various hospitals is so wanting in uniformity as to show that there is no settled opinion in the profession at present as to its value.

7. It would be well, when alcohol is prescribed in clinical hospitals, that some exact amount of it should be prescribed, and not a varying amount of an alcoholic fluid not analyzed.

8. The London Temperance Hospital experiment seems to indicate that many diseases do well without the use of any alcohol, which previously were thought to require it.

9. Hence, whilst the modesty of science forbids us to say that alcohol will prove useless in any given disease, it seems advisable for patients in hospitals to have that drug administered to them with far greater caution than has hitherto been the case. And it would seem also to follow that all mere dietaries should be free from the routine use of alcohol, which should in all cases in hospitals be distinctly ordered to the patient by his medical adviser.—*Quarterly Journal of Inebriety*, July, 1886.

A CONTRIBUTION TO THE COMPARATIVE STUDY OF CONVULSIONS.—An elaborate article by HUGHLINGS-JACKSON, which appeared in *Brain*, for April, 1886, is analyzed as follows in *The Manchester Medical Chronicle* for June, 1886.

On a review of the manifold phenomena included in the familiar terms "fits" and "convulsions," the author comes to the conclusion that they may be divided into three great classes, according to the regions of the central nervous system from which they take origin. These regions he regards as forming three groups of centres classified, in order of evolution, as lowest, middle, and highest sensori-motor centres. The lowest centres are those lying in the spinal cord, medulla, and pons, with some others, reaching as high as the centre for ocular movements; the middle "level of evolution" includes Hitzig and Ferrier's motor centres, Schäfer and Horsley's trunk centres, and Ferrier's sensory region; while the highest level consists of parts of the brain in front of the middle motor centres, with the highest motor centres, and the highest sensory centres lying in the occipital lobes. All parts of the body are represented by each order of centres, in simplest, more complex, and most complex combinations respectively. To the highest level of all are referred epileptic convulsions (true epilepsy), to the middle level epileptiform seizures, and to the parts lying at the lowest level "inward fits" or respiratory convulsions.

After laying down these general principles, the author concentrates his attention, throughout the rest of the paper, on the convulsions (respiratory convulsions) of very young children. These fits occur, as he points out, almost exclusively within the first year of life, a highly momentous period of the brain's existence. The two higher levels are as yet unevolved, while the centres of the lowest level are rapidly developing, those for the organic functions naturally taking precedence of the others in point of time. Thus, at one epoch of life, the respiratory centre, for example, will be "at once undeveloped and actively developing," and, therefore, highly excitable and unstable. At the same time, the higher regulative mechanisms, which will afterward repress exuberant discharge, are still practically non-existent.

Here, then, we have a condition favorable to the easy provocation of excessive respiratory efforts.

Again, as the author shows, a motor centre suddenly goaded into excessive and rapid discharge will tend to sum up the several movements under its sway, to produce them no longer in their natural alternation but coëtaneously; so that opposing groups of muscles will finally pass from harmonious working into violent contention—into that condition, namely, which we recognize as a convulsion. Moreover, the convulsions, at first confined to the muscles employed in normal respiration, will gradually spread to the auxiliary muscles, and thence, by secondary excitation of neighboring motor centres, to most of the muscles of the body.

The fact that rickety infants are above all liable to these fits appears to Dr. Hughlings-Jackson to point to their true pathology. The softness of the ribs in rickets deprives the diaphragm of its normal support, and seriously embarrasses respiration. The respiratory centre is thus perpetually bathed in blood so highly venous that it requires only a slight additional stimulus to throw it into furious action. A coughing fit, for example, will, by checking the already imperfect respiration, decide the onset of a convulsion.

This theory is supported, in his opinion, by the fact that similar convulsions occur in rapidly asphyxiated animals, and in children the subjects of laryngitis, or cyanosed from congenital heart disease. Further countenance is given to it by the success of the treatment usually adopted for cases of laryngismus. Cold sponging, removal to a purer or even to a colder air, and such drugs as musk, belladonna, etc., are all stimulants of the respiratory centre, and find their chief value in reducing the persistent venosity of the blood.

The paper concludes with some remarks on "eccentric irritations," which the author believes to be powerless of themselves to start convulsions; they are important only as determining an explosion for which the centre has been prepared by a more potent agency.

THE MICROBES OF PNEUMONIA.—The subject of acute pneumonia is one of those which of late has excited a considerable amount of attention, and yet, common as the disease is, it is one which is surrounded by many unsolved problems. PROFESSOR WEICHSELBAUM has recently contributed to the Vienna Medical Society a paper, in which, after stating the prevalent opinions upon the nature of the affection, and dwelling especially upon the different opinions held by Friedländer on the one hand and Fränkel on the other as to the precise characters and properties of the supposed bacterial agent, he relates his own experiences. He points out that clinicians are divided into two camps upon the etiological question, some regarding pneumonia as solely an infective disorder, others considering that the infective forms are different from those caused by exposure to cold. Weichselbaum, distinguishing between primary and secondary forms, divides them into (1) lobar; (2) disseminated; (3) passive pneumonia—hypostatic, etc.; and (4) lobular. He has examined 127 cases and instituted 87 cultivation experiments, the material for the cultures being obtained one or two hours after death, as well as from the living subject, by means of a Pravaz syringe introduced into the lung and pleura. He distinguishes four kinds of microörganisms. The diplococcus pneumoniæ is the most common, consisting of oval, elliptical, and round cocci, which occur in chains as well as in pairs. The chains are composed of from six to eight or as many as twenty to thirty cocci, are straight or slightly curved, and the cocci are developed in a capsule of varying thickness in proportion to their vitality. The second variety resembles the first,

but distinguished by a greater uniformity in spherical shape, and in forming long and sinuous chains. The third is known as the Staphylococcus aureus s. albus. The fourth he terms the bacillus pneumoniæ, consisting of rods of different lengths, the smallest and apparently youngest being oval. They have a capsule, and correspond to Friedländer's pneumococcus. The first variety was found in ninety-one cases, mostly of croupous pneumonia, also in the secondary forms. The second, or streptococcus, was found twenty times—namely, in fifteen cases of primary and five of secondary pneumonia. The staphylococcus occurred in secondary cases only, and mostly where the primary disease was due to this microörganism. The fourth kind was met with nine times, four times unmixed with other forms. All these organisms were most abundant in the earlier stages of the disease, being scanty or absent in gray hepatization, and, if present, staining badly or unencapsuled. At the margins of the pneumonic focus in the œdematous tissue micrococci were numerous, pointing to the œdema being not a passive process but a precursory stage of pneumonic infiltration, and resembling the invasion of cutaneous tissue in erysipelas. Moreover, inflammatory changes accompanied by these microörganisms were found in the respiratory tract above the lungs. Secondary meningitis in pneumonia was shown to be due to the presence of the same microorganisms, which were also found in the serous exudations of pleurisy and pericarditis, which might complicate the lung affection. The bacterial origin of the disease was, therefore, held to be demonstrated.—*Lancet*, June 12, 1886.

POISON BY RAT BITES.—In an article thus entitled, in the *American Practitioner and News* for July 24, 1886, DR. A. J. BANKER records in full five such cases. He says: "I have collected cases to the number of ten; the full notes of some I have not yet been able to obtain. Out of the number, four have died; two with dropsy, one with tetanus, and one with extensive sloughing and so-called pyæmia. The history of the cases is, in the main, the same, the stage of incubation varying but a few days. In most of the cases the wound healed kindly without general disturbance, and the general disturbance which came on subsequently seemed to be in the nerve-centres.

"In each of these cases a particular train of symptoms was developed, bearing a relation in a collection of cases which suggests the idea of a specific poison. The question now arises, Is this form of poison specific in its character, or does it belong to that general class of blood poisoning denominated pyæmia and septicæmia? As to the treatment which seems best adapted to the poison, I have been unable to arrive at any definite course. The only fact which impressed itself forcibly upon my mind was the intolerance of the patient to any medicine containing acid. The muriated tincture of iron acted as an excitant and aggravated the nervous symptoms, besides it had a deleterious effect on the secretions. Alkalies are well borne in the acute stages, and alleviate the sufferings and favor elimination. Salicylate of soda with acetate of potassium, or large doses of bicarbonate of soda, act favorably. A thorough saturation of the blood with alkalies seems to counteract the poison."

DOVER'S POWDER AND ITS MODIFICATIONS.—"If I could envy any one, as a therapeutist, it would be the old physician who originally had the happy thought of blending astringent opium with relaxant ipecacuanha, and both with a diuretic and laxative. I suspect that Dover's name, though so little is known of the man himself, is more frequently quoted than that of any other physician. This by the way; that which I have in my mind is to suggest that it is often very good practice to modify Dover's powder by combining the one grain of opium and the one grain of ipecacuanha with other salines than sulphate of potassa. The true Dover's powder contains nitrate of potassa as well as sulphate, four grains of the nitrate to four of the sulphate, and it often seems to me reasonable to revert to this form, the nitrate of potassa being, in small doses, a good diuretic. I also very often venture to prescribe the powder with other modifications of the saline part, and with advantage. In acute rheumatic fever I usually substitute sodium salicylate for the potash salt; in gout, bicarbonate of soda; in remittent febrile cases, two grains of quinine with five of sodium salicylate; and in tonsillitis and other febrile throat affections, chlorate of potassa. It would surely be worth the time and skill of one of our scientific pharmaceutical brethren to prepare and bring out a series of Dover's powders in these modified forms."—DR. B. W. RICHARDSON, in *The Asclepiad*.

TREATMENT OF HYSTERIA BY COMPRESSION OF NERVES.—DR. RUAULT, in a communication to the Clinical Society of Paris, recommends, for the arrest of an hysterical attack, compression of a superficial nerve trunk, especially at its point of emergence from the deep parts. When firm pressure is made on both supraorbital nerves (the ones most easily got at), kept up for sufficient length of time, and directed to one point of the nerves, the patient's face soon takes on an expression of pain, several short inspirations are taken in rapid succession, followed by a deep expiration, and the fit is over. Dr. Ruault has thus, during the past four years, almost invariably succeeded in cutting short hysterical attacks, including hysterical dyspnœa, hysterical delirium, etc.—*Glasgow Medical Journal*, June, 1886.

EXPERIMENTS IN GASTRIC DIGESTION.—BIKFALVI maintains that in flesh-eating animals the chief function of gastric digestion lies in the dissolution of connective tissue and other collagenetic substances; while the digestion of albuminoids is chiefly effected by the pancreatic juice. He finds by experiments on dogs that in two hours of gastric digestion the following percentages of given substances are digested:

Raw casein	25 per cent.
Boiled egg albumen	41 "
Raw ligam. nuchæ	49.5 "
Raw liver	52.5 "
Raw kidney	55.33 "
Boiled beef	58 "
Raw unstriped muscle fibre	68.5 "
Raw beef	79.5 "
Raw hyaline cartilage	81 "
Raw fibrin	97.5 "
Raw lungs	99.5 "
Raw tendons	95.5 "

—*Centralbl. f. d. med. Wiss.*, No. 7, 1886.

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SATURDAY, AUGUST 7, 1886.

THE NATURE OF TETANUS.

NEXT to hydrophobia tetanus is, probably, the most obscure subject in the field of surgery. The explanations of its nature which have yet been offered or accepted, have not been entirely satisfactory, nor have they led to any good understanding of the principles of treatment of this fortunately rare disorder. The nervous theory has much in its favor; but it cannot be said to be competent. The zymotic theory is, to some minds, no more so. To those who have witnessed a number of cases of tetanus any explanation of its nature will probably be less satisfactory than it would be to those who have formed their ideas of it from reading. Circumstances peculiar to individual cases often seem inconsistent with any one of the theories thus far offered as to the nature of this disorder. And yet something is being done from time to time to elucidate this obscure subject.

The latest contribution with this object is a communication of ROSENBACH, of Göttingen, to the Fifteenth Congress of German Surgeons, in which the germ theory of tetanus is supported. Many experimental attempts to convey tetanus from man to animals have proved unsuccessful. Carle and Rattone first succeeded in producing tetanus by inoculation of the contents of an acne pustule. The results were positive in eleven out of twelve rabbits. Nicolaier inoculated rabbits with earth, and in a number of cases produced, in addition to malignant œdema, a set of symptoms which resembled those of tetanus. Rosenbach attempted to come much closer to the nature of tetanus by securing inoculation material from a patient suffering with tetanus after having had his feet frozen. This material was taken from the part below the line of demarcation, and was inoculated into two guinea-pigs, which showed symptoms of tetanus the next day, and died in the course of it. Taking new material from the point of inoculation in these animals, Rosenbach succeeded in producing similar symptoms in four guinea-pigs and eleven mice. This tetanus was, apparently, identical with Nicolaier's earth tetanus. The most marked symptom was spasm of the extensors of the tail and of the hind legs.

The location of the first symptom depended upon the seat of the inoculation. If this were made in the loin, the corresponding leg became stiff, the foot spasmodically extended, the tail rigid and inclined toward the inoculated side; and similar symptoms soon followed on the opposite side. After this the muscles of the lower part of the back were affected, and then those of the anterior extremity, and of the jaw. Trismus and opisthotonus followed, and in about twenty-four hours the subjects of experiment died in pronounced muscular tonus. If the inoculation was practised on the anterior extremity the symptoms began in it, with spasmodic extension and pronation; and trismus soon followed. In these cases the body was flexed toward the side on which the inoculation was made, in a state of pleurosthotonus. In all cases there was first a local and then a general state of tonic muscular spasm.

Rosenbach discovered in the inoculation material which he used a delicate bristle-shaped bacillus, similar to that described as the cause of earth tetanus. This he successfully cultivated in coagulated serum, and found the fourth generation as efficient as the first. Under cultivation the bacillus developed a spore at one end, and came to resemble a pin or drum-stick in shape. In endeavoring to isolate this bacillus, Rosenbach got no further than to obtain it in conjunction with the bacterium of putrefaction. But, as the latter alone does not produce tetanus, it seems to him proper to attribute to the former the tetanus which follows the inoculation of both together. He also thinks that this experimental result is important from its correspondence with the fact that tetanus in human beings is apt to follow putrefactive wounds. In regard to the mode of propagation of this bacillus, and of infection of the whole system, Nicolaier has made a number of experiments, and has detected the bacillus once in the sciatic nerve and twice in the spinal cord, and Rosenbach found it in the latter situation twice.

In the discussion upon this communication, KÖNIG confirmed the identity of the experimental tetanus of Rosenbach and of Nicolaier with that of human beings, and that which frequently occurs in horses after castration. In these the spasms often

begin in the muscles of the extremities and back; and so, in human beings, trismus is not always the first evidence of tetanus. SOCIN reported that he had also produced genuine tetanus with inoculations of garden earth. EBERMANN called attention to the possible influence of ptomaines in the production of tetanus.

This interesting presentation of the subject of the pathogenesis of tetanus contains some assertions which cannot be admitted without question. In the first place, it is not true that tetanus is more apt to follow wounds in which putrefactive changes occur. On the contrary, the experience of most surgeons is that no sort of wound or injury is specially liable to cause tetanus, and it is a recognized fact that it is as likely to follow the most trifling injury as the most serious. This is as true of injuries of the nerves themselves, as it is of any other part. Again, it is decidedly exceptional to find the first manifestations of tetanus in muscles other than those of the neck or jaw. It is noticeable also, in a paper which maintains the germ theory of this disease, that the investigators who have been most successful in producing it experimentally have found the specific germ in only a small number of the cases, and then in ridiculously small numbers; and there is no mention of its ever having been found in the blood or nervous system of human beings.

It has not escaped the attention of Rosenbach that there seems to be a disparity between any conceivable rate of multiplication of germs within the body and the rapidity of the development of experimental tetanus. For an explanation of this he has to have recourse to the hypothesis of a ferment, such as belongs to the humoral theory of the nature of tetanus. This weak point in the germ theory we believe to be fatal, and we cannot see how it can be lightly passed over, or how Rosenbach can so innocently designate as an "incubation period," one which was no longer than twenty-four hours. The experiments reported are interesting, and deserving of careful study; but they are by no means conclusive. They may show that some lower animals are liable to tetanus after inoculation with irritants containing a certain bacillus; but it is well known that tetanus may occur in human beings in consequence of injuries in which the skin has not been broken. There is a case reported by Nicaise, in which it was produced by dashing a glass of cold water upon an infant. Then there are the cases of idiopathic tetanus, in which the presence of a bacillus can hardly be imagined, and those of trismus nascentium, usually attributed to tying the umbilical cord, a method hardly favorable to the entrance of germs. In fact, the nature of tetanus is almost as obscure to-day as that of hydrophobia, and the nervous theory still seems the most reasonable one in regard to it. In some cases it seems to be a disease caused by imitation. Not long ago there occurred two cases in a hospital in this city, in the second of which the disorder seemed to be of this sort. It is a curious fact that a large number of cases of tetanus have followed injuries received in celebrating the Fourth of July in certain cities in this country, so that there was a kind of epidemic, the number of cases being out of all proportion to the ratio of cases of tetanus in gunshot wounds in general. Such occurrences must be largely due to the prevailing fear of lockjaw at this time, although it might be supposed to be explained by the great heat of this season of the year.

It would be a great gain to science if we could discover the *materies morbi* in tetanus, and a great gain to humanity if we could learn how to forestall its action. But we have not got so far yet; and the germ theorists may or may not be on the right track. Further experiments with inoculation of different materials may clear the subject up, if they are undertaken without bias, and carried out with rigid accuracy.

THE TREATMENT OF ERYSIPELAS.

So much has already been written on the subject of the treatment of erysipelas that it might seem superfluous to add anything to it. But from time to time the journals contain accounts of methods which have been so successful in the hands of those who recommend them that it seems surprising that they do not supersede all which have preceded them. This surprise, however, diminishes when it is borne in mind that a remedy which proves useful in one case of this disease may prove useless in the next, although the cases seem exactly alike. The general principles of the treatment of erysipelas are unfortunately sometimes overlooked in the zeal which champions some special method, and too much is attributed to what may have had but a small share in the cure, or neglect of these general principles leads to failure when a method of undoubted value is tried.

The attempt of Hueter to cure erysipelas by means of hypodermatic injections of solutions of carbolic acid, which has fallen into disuse, illustrates the error of following too blindly a special indication. The belief in the germ theory of this disease, which is quite general in Germany, led Hueter to hope that it could be cured by destroying the germs at the seat of the inflammation. In this, experience has shown that he was mistaken. The books indicate plainly by their contradictory statements that others have committed the same error of generalizing from too scanty premises. Thus, one author recommends the use of venesection, or blisters, or ointments, or washes, or powders, and another says that they do no good. Both statements accord with the experience of those who make them;

but it is evident that both cannot be of universal application.

It is not necessary to illustrate this point further. But, bearing it in mind, it may be possible to estimate properly the claim of special efficacy for any new or revived method. The most recent claim of this sort is made by KÜHNAST in the *Centralblatt für Chirurgie*, February 27, 1886, for the plan of multiple scarifications, followed by the application of carbolic acid solution. Kühnast's experience has been gathered in the clinic of Prof. Kraske, in Freiburg. Here a few cases of erysipelas have recently been treated very successfully in the way described. Acting upon the theory that erysipelas is a germ disease, and relying upon the investigations of Fehleisen, which seem to show that the coccus of this disease is found in and near the seat of evident inflammation, the practice of Hueter has been modified by making scarifications carried beyond the limit of the redness, squeezing out the accumulated fluids, and then rubbing in a five per cent. solution of carbolic acid, with the idea that the release of the accumulated fluids of the skin and subcutaneous tissue and the relief of tension would favor the access of the germicide to the germs. The development of this theory by Kühnast is interesting; but it is not materially different from the way in which the good effect of punctures or scarification was accounted for as long ago as 1828, when Sir R. Dobson advocated this method. Kühnast appears to attribute too much virtue to the antiseptic. His preference is for carbolic acid, but he has had to abandon it for corrosive sublimate in one case; and he very properly thinks that salicylic acid or boric acid may be more suitable in others.

There can be no question that very satisfactory results have been secured in a few cases by this method, but neither the experience nor the argument of Kühnast warrants the conclusion that it deserves any higher estimate than that it is a sensible plan for the treatment of certain cases. These seem to be cases seen early, before deep inflammation has occurred, in which the general condition of the patient is fairly good. But they are the very cases in which any one of many methods may prove useful, and in which most surgeons would hesitate to take such energetic steps to meet the disease. Still, it may be well to call attention once more to the value of local bloodletting and relief of tension in the bloodvessels and lymphatics to which Kühnast's cases bear witness; and to the value of dressing the little wounds made by the knife with material which shall exclude the possibility of a new infection. We are not disposed to attach much importance to the germicide action of any of the antiseptics recommended for this purpose; but they can do no harm, and they help in securing the purity of the dressings.

CHIARA'S PORRO CASES.

THE eighth operation in the general Porro record, and the fourth of Italy, was that of PROF. CHIARA, then attached to the Santa Caterina Maternity of Milan; this was in August, 1879. During his service in that hospital he operated five times, saving his last three cases, and all of the five children. After his removal to Florence, having been appointed to a professorship in its University, he became attached to the Maternity in that city, and resumed his obstetrical labors. Here, in July, 1884, he performed his sixth operation, which proved fatal from kidney disease. On January 13, 1885, he operated for the seventh time; on May 18, 1886, for the eighth; and on June 21, 1886, for the ninth time, the three cases being entirely successful. By these nine operations six women and nine children were saved.

In a tenth case Prof. Chiara made trial of the method of Sänger, by which Dr. Leopold, of Dresden, had saved eight of his nine cases, and all of the children; and was successful in saving mother and child. This favorable result will probably lead to the introduction, to some extent, of the Sänger method into Italy.

An additional Porro operation was performed in the Maternity of Florence by Dr. E. Fasola, assistant to Prof. Chiara, on April 19, 1886. Sänger's method was first tried, but was abandoned because of a severe uterine hemorrhage, and the method by amputation of the uterus substituted for it. It is generally believed that convalescence after the Sänger operation is more rapid than after the Porro operation, and this belief is strengthened by the experience of Prof. Chiara's Sänger case, in which the patient sat up for a short time on the tenth day.

SOCIETY PROCEEDINGS.

AMERICAN NEUROLOGICAL ASSOCIATION.

Annual Meeting held at Long Branch, July 21, 22, and 23, 1886.

(Specially reported for THE MEDICAL NEWS.)

WEDNESDAY, JULY 21.—MORNING SESSION.

DR. BURT G. WILDER, of Ithaca, N. Y., on retiring from the Chair, said that in view of the fact that he had delivered a somewhat extended inaugural address upon a general subject last year, he would confine his remarks to the brief discussion of what he believed to be a new fact, namely

THE ACCURATE COLLOCATION OF A SUTURE AND FISSURE IN THE HUMAN FŒTUS.

In three alcoholic fœtuses in the Cornell University, estimated to be from three to seven months advanced, the lambdoidal suture directly overlies a short but deep fissure, which has seldom been noticed and has been hitherto misinterpreted, and which may be called the

lambdoidal fissure. A photograph and drawing of one case were submitted; the fissure was very distinct and deep, but had no ental correlative in the cases examined. He remarked that Bischoff and Huxley had regarded the fissure itself as temporary in man, though persistent in apes.

Prof. Wilder believed the fissure to persist in man also, but to lose its relation with the suture in the last two months of fœtal life. He mentioned the probability that the coronal suture is similarly related with the precentral fissure, and closed his remarks with an enumeration of several questions that arise in connection with the subject, and with the suggestion as to making use of fœtal brains by careful exposure, preservation, photographing, etc.

PROF. WILDER then introduced to the Association Dr. Charles K. Mills, of Philadelphia, the President-elect.

DR. MILLS, on taking the Chair, made a few introductory remarks on the work of the Society, and on the proposed Congress of American Physicians and Surgeons. He then presented specimens and described the brains of a monomaniac, two murderers, an idiot, a negro, and a Chinaman; drawing attention to the

IMPORTANCE OF THE STUDY OF THE CEREBRAL CONVOLUTIONS

in these cases.

He congratulated the Association upon the large amount of published work which had been done by its members since the last annual meeting; instancing the fifth volume of Pepper's *American System of Practical Medicine*, out of the twenty-four contributors to which, more than one-half were members of the American Neurological Association. He urged the importance of individual effort toward increasing the membership of the Association, so that it would be in fact, as well as in name, the great national representative of those members of the medical profession who are interested in neurology and psychiatry, and the branches of science which are specially correlated to those branches.

He discussed at some length, and with approval, the project for the formation of a Congress of American Physicians and Surgeons; he pointed out that difficulties might arise in connection with the initiation and inauguration of the Congress. He spoke of danger apprehended by some, that the Congress, like another national medical body, might drift insensibly into the arena of medical politics, but believed, if wisdom prevailed during its development, that such might be avoided. He thought it would be better for the meetings of the Congress to be biennial, thus allowing the associations, as special organizations, to have entirely separate and independent meetings on alternate years. He also believed it desirable to have the meetings of the Congress held at a fixed location, and thought Washington the most desirable place, but held that this whole subject of the time and place of meeting was a matter of minor importance, and could be safely left to the judgment of the committee of conference.

He then exhibited the brain of Burk, a delusional monomaniac; that of Taylor, an alleged delusional lunatic, executed in Philadelphia; also that of a feeble-minded youth from the Pennsylvania Training Institute for Feeble-minded Children; as well as the brains of a negro and a Chinaman. The brain of the Chinaman was first exhibited at the Philadelphia Neurological Society, by Dr. A. J. Parker.

Dr. Mills stated that the Chinese brain was the first that had ever been described so far as he knew. In discussing the appearances presented by these specimens he gave what he regarded as the peculiarities of human brains of low type, and also the differences between the simian and human brain. He demonstrated that in the white adult brains presented, and also in others, of which descriptive notes were read, that there were easily recognized differences between these and those of individuals of higher grade. In all, asymmetry was distinctly atypical, both of lobes and gyral and fissural arrangement, he believed to exist in a marked degree between the two hemispheres.

In general terms, the white brains were found to approach more nearly in type the brains of the negro, ape, and fœtus than is ever the case in an ordinary adult white brain, even in individuals of moderate intelligence and intellectual power. He discussed the question, whether these specimens, some of them from men who had committed crimes of violence, who had taken the lives of their fellows, sustained the conclusions of Benedict and others: that the brains of criminals are absolutely distinctive; whether we had a criminal type of brain which could even be separated from the type which is found in forms of insanity. Such a generalization he regarded as too narrow.

In the brains presented, there were certain points of affinity and points of difference noted, from known conditions of higher human types; these were so great as to allow him to put them into a class together as representatives of brains of low type. He regarded the attempt, however, to construct a theory as to the anatomical basis of crime, in some respects unphilosophical; criminals and transgressors of the law being of the most diverse character. Dr. Mills criticised some of Benedict's conclusions, although he paid a tribute to his observations and regarded them as stimulating research to a wonderful degree. He thought it strange that so little research had been made in the morphology of the brain. Although we had a large negro population, but little had been done toward the mapping out of the negro brain. He remarked that no Indian brain had ever been described in detail, and thought some of our army surgeons on frontier posts, who had great facilities for such investigations, should undertake this interesting work. Dr. Mills also stated that he had looked in vain for a description of the conditions presented by the cerebral surface of an intellectual woman.

In conclusion, he remarked that although much study had been given to fœtal brains, no detailed investigations of the brains of infants, children, youths, and adults, arranged in series and accompanied by histories, etc., had ever been made; which he considered a highly important and valuable method of study.

DR. WILDER remarked that the subject was worthy the importance which the President had assigned to it, and he was afraid there were a large number of physicians and surgeons who were not as familiar with the

brain as they ought to be, and he considered it the highest compliment the President could pay to the Association in speaking in the straightforward manner he had assumed in his paper in relation to the anatomy of the brain.

He would have liked to examine the brain of the Chinaman more thoroughly in order to confirm some of Dr. Mills's statements. In the negro brain he had called attention to the exposure of the insula; he had one specimen where it was still more exposed and in the specimen he spoke of the brain was hardened in the skull so that there was no chance of undue pressure. He noticed that the Chinaman's insula was abnormally covered, but he thought it would not do to credit the Chinaman with it, as he noticed the brain had been flattened upon one side and the first temporal convolution had been pushed over the insula. He also agreed with the President in his remarks upon Benedict's generalization. He thought, however, they merited careful scrutiny.

With regard to the confluence of the Rolandic fissure and the Sylvian, he remarked that he should hesitate to say anything, but in some twenty or thirty brains that he had examined he had never seen the confluence of central and Sylvian.

He thought that it would be a difficult matter for him to find an average brain, and he suspected it was the same with a large number of others; he thought the brains that were studied were more or less peculiar, giving as an instance, that some years ago he secured six human brains for his students to dissect, but upon examination each of them had some peculiarities, and he concluded they were too valuable for ordinary dissecting.

He then asked the President, supposing he had not known this to be a Chinese brain before him, whether he would have felt disposed to note its peculiarities, and further if there was anything that would lead him to think it belonged to a different race from our own.

DR. L. C. GRAY, of Brooklyn, did not think there was any disagreement among neurologists as to the one-sided manner in which Benedict's researches were conducted. He thought it was unfair in Dr. Wilder to criticise any one point in a paper which contained so many individual peculiarities, until after a careful examination of the specimen. He thought that until some one has determined the limitation of the various convolutions in the human brain it would be difficult to set the line.

There were two points, he said, which had attracted his special attention, for in two negro brains which he had carefully studied, there was some uncovering of the fissure of Sylvius; but he had never seen the fusion of the fissure of Rolondo with the fissure of Sylvius.

DR. DERCUM, of Philadelphia, remarked that some months ago he had exhibited a brain from an epileptic female; the island of Riel was covered on both sides, but on one side the fissure of Rolando was confluent with the fissure of Sylvius.

He also remarked that Dr. Parker had described several fissures which had occurred in a negro brain on the mesial surface which were afterward ascribed to mechanical causes.

MR. JOSEPH JASTROW, of Johns Hopkins University, by invitation of the President, stated that he had had twelve or fifteen brains before him for class demonstration, and after taking plaster impressions had taken composite photographs of them, hoping to establish, thereby, a standard brain.

DR. BIRDSALL, of New York, thought that Benedict's theories were rather strained but may have stimulated further research. He also opposed the view that one peculiar type of brain must form that of a criminal. He thought the study of the cranium in different races would be of advantage, but that the study was still in its infancy as to relations between these peculiarities and their functions.

DR. SACHS, of New York, remarked that he was naturally interested in the general anatomical bearings of the fissures. He thought we ought to distinguish between the primary and secondary development of the fissures. He remarked that it would have been important to know the conformation of the skull from which the brain of the Chinaman was removed, this he thought might prove an important factor.

DR. WILDER remarked that he thought the discussion had been made in regard to the fissures which are considered as primary; he did not think much would be gained by speaking of the secondary fissures.

THE PRESIDENT agreed with Dr. Wilder that it would be better to harden the brain in the skull. But in reference to the specimens he had shown, some of them were obtained under great difficulties, and he was glad enough to get the brains as they were. The fissure of Rolando, in one of the cases, was crossed by a convolution instead of being confluent. It is true, as Dr. Wilder has said, that many brains are peculiar, but perhaps it might be due to the reason that most brains secured are from those of low organization.

In regard to the Chinaman's brain, he would not have known that it belonged to *a different race;* there was a peculiarity of appearance, but he could not understand what it was. Dr. Parker noticed an unusual obliquity and shortness of the orbital surface. In regard to Benedict, he did not think we should be too severe in our criticisms, but he (Benedict) had a bad manner of generalizing.

In regard to Mr. Jastrow's remarks, he thought such experiments might be very interesting in studying the higher and lower types, but was not so certain of thus attaining a standard of the normal brain. He considered that Dr. Wilder had answered Dr. Sachs's remarks, and that he himself based his remarks upon the primary fissures principally.

An Executive Session was then held, and the following were elected

OFFICERS FOR THE ENSUING YEAR:

President.—Landon Carter Gray, M.D., of Brooklyn, N. Y.

Vice-President.—John Van Bibber, M.D., of Baltimore, Md.

Secretary and Treasurer.—G. M. Hammond, M.D., of New York.

Councillors.—Dr. B. Sachs, of New York; and Dr. Wharton Sinkler, of Philadelphia.

DR. L. C. Gray, of Brooklyn, then read a paper on

LESION OF BOTH TEMPORAL LOBES, CAUSING ALMOST ABSOLUTE LOSS OF MEMORY OF EVENTS, WITHOUT WORD-DEAFNESS OR DEAFNESS.

Male, aged forty-three years, unmarried, with a probable history of specific disease. Patient was admitted to the Hospital for Nervous and Mental Disease in the early part of June, remaining there until the latter part of the month, when he was removed to the Morris Plains Asylum, where he died in October. During the whole of this time careful observation failed to detect any other symptom than that of absolute loss of memory of events, without word-deafness or deafness.

At the post-mortem there was found a lepto-meningitis of both the right and left temporal convolutions, which meningitis also extended around the fissure of Sylvius, involving the gyrus marginalis and the bases of the two ascending convolutions.

A number of letters of the patient were read, which showed this peculiar loss of memory and the preservation of his intellectual faculties in other respects.

AFTERNOON SESSION.

THE PRESIDENT announced that the discussion upon Dr. Gray's paper was in order.

DR. WILDER said that he had not quite understood the lesion Dr. Gray referred to in his paper.

DR. GRAY replied that meningitis was the only lesion in the case.

DR. ZENNER, of Cincinnati, asked to what extent the cortex was affected.

DR. GRAY replied that both temporal lobes were softened, and the layer of gray matter was much less than any other portion of the brain. No microscopical examination was made.

DR. ZENNER asked whether there was any confusion of speech.

DR. GRAY answered that he was told there was none at all, and he knew there was no evidence of it in the patient's letters.

DR. ZENNER remarked that he would not like to accept a case as refuting the ideas which have been generally accepted, that the temporal convolutions are the receptacles of speech, so to speak; in a case like this, where the softening was not marked as a meningitis, it does not necessarily rob the parts underneath of their function.

DR. GRAY stated that both temporal lobes were softened.

DR. ZENNER thought that could have occurred in the last few days of life. As regards the temporal convolutions being the seat of hearing, he thought that had been less definitely established; that it was only one of the organs in physiology, and that there was nothing which he knew of in pathology which would establish the temporal convolutions as the seat of hearing; but lesion of the temporal had been established to result in word-deafness.

DR. V. P. GIBNEY, of New York, then read a paper on

PSEUDO-HYPERTROPHIC PARALYSIS.

He remarked that his motive for reading the paper was to record a case in order to supplement some microscopical specimens; the latter having been carefully prepared by Dr. Amidon. For many years he had been able to distinguish quite readily between a progressive muscular atrophy and a pseudo-hypertrophic paralysis; but what now surprised him was that the spinal cord had not been found to be diseased.

The case he reported came under his care in April, 1878; was under daily observation for one year, reporting from time to time afterward, and died December 30, 1885. Patient was a male, eight years of age, the loss of power dating from the second year of his life; but the mother felt no anxiety about the child's inability to walk, and did not seek medical aid until he was six years of age. The family are all decidedly neurotic, father, mother, and children, four or five in number, having all some peculiarity of speech. Three children have died of tubercular meningitis, so reported. One brother, two years younger than the subject of this history, is afflicted in the same manner, and his case is progressing the same way.

DR. AMIDON then presented for examination under the microscope some sections of the normal cord, and some specimens of the cord from the child whose history had just been given by Dr. Gibney; the only difference discernible being the change in the cells of the anterior horns, the contour of the cord being apparently intact.

DR. GIBNEY asked whether there was any cord lesion in pseudo-hypertrophic muscular paralysis? whether the latter stages of this disease are distinct or whether they run one into the other?

DR. G. W. JACOBY, of New York, remarked that the last time he had the pleasure of demonstrating a case, and in seventeen recorded cases, there was no change in the anterior cord; but, on the other hand, there was in the muscular tissue a shortening of the fibres, an increase of connective tissue, and an increase of fat. In some cases there was no reference made to the motor nerves in the muscles themselves. In others, where pieces of the muscular tissue had been removed and examined microscopically, atrophy of the terminal filaments of the motor nerves was found with other changes. He asked Dr. Amidon whether he paid any attention to that.

DR. AMIDON replied that Dr. Gibney had sent him a portion of the dorsal muscle for that purpose, but he had not yet examined it.

DR. SACHS remarked that the subject of the paper was of practical interest at this time in neurology, as we had had an era in which diseases of the brain were discussed mostly; then there was an era of interest in the peripheral nerves. He thought that, in direct contradistinction to Charcot's school, we must take into consideration what Erb had done. He supposed that all knew that this condition is common in the young, but there is another form which is not, and which is called juvenile muscular atrophy; juvenile atrophy should probably be classed as a motor and spinal cord affection.

He thought there was one clinical point which would enable us to establish a differential diagnosis, and that would be by the electrical reaction. If the affection is peripheral only, the electrical reaction may slightly diminish or increase; but if central, it is not altered.

DR. ZENNER remarked that we know that a change in the muscular tissues produced by disease will pro-

duce a change in the ganglionic cells. He thought that where the disease had commenced in the muscles and nerves, there would be but slight change in the cord, perhaps only in the size, and no change otherwise in the intercellular tissue. It seemed as though the change there usually might be secondary, and that the extensive disease in the periphery is primary. He thought, however, that where there is extensive disease in the anterior portion of the cord the disease would be primary.

DR. GRAY remarked that it is true that peripheral lesions might cause central troubles probably travelling in along the nerve filaments, but there was no decided proof to that effect. In some cases secondary central disease occurred in animals where there was a neuritis produced by caustic, as also in human beings where caustic had been used upon the scrotum or testicles. One of these cases of peripheral disease of which he has known has been of a decided nature.

DR. MASSEY, of Philadelphia, thought that if there was no life in the muscles the cells would be affected.

DR. ZENNER explained that he had in view at the time he spoke the idea of serious injuries, as, for instance, the loss of an arm, after which atrophy had been found in the brain or cord.

DR. MILLS asked an opinion as to the difference between pseudo-hypertrophic paralysis and muscular atrophy; stating that one of the brains he exhibited in the morning was from a youth who presented congenitally these two diseases together. He was one of three brothers in all of whom these diseases were conjoined; some portions of the muscles were removed, and a report appeared some years ago of them by Dr. Curtin. His own convictions were that these two diseases were practically the same thing.

DR. LLOYD, of Philadelphia, stated that he had reported the case of a female in whom pseudo-hypertrophic paralysis and atrophy of the muscular tissues were combined; there was wasting of the calf muscles and also of those of the forearms, but there remained some faradic contractility, there was great muscular loss of power, she could hardly raise her head from the pillow. There were also marked changes in her joints, hardly any of the olecranon process was left, and the patellæ were only one-third of their normal size.

DR. GRAY remarked that he had a case in his wards who had been some six or seven years in dying. He has grown enormously fat for the reason that he had been kept quiet; he is helpless in his lower extremities and almost so in his upper ones but he takes an enormous amount of food. To look at him, one would suppose it to be a case of pseudo-hypertrophic muscular paralysis.

DR. G. M. HAMMOND, of New York, remarked that the destruction which occurred in the cells should not necessarily produce destruction of the spinal cord or atrophy, but if the disease extended from the muscles up the nerves it might do so.

DR. AMIDON said that he thought that in progressive muscular atrophy there would not be any caving in, so to speak, of the spinal cord.

DR. G. M. HAMMOND replied that a disease which commences in the spinal cord, might be extensive enough to produce caving in of the anterior horns, whereas in the specimens shown, the horns seemed to be in very good shape although the disease involved the cells.

DR. DERCUM, of Philadelphia, thought that point was well taken, for in some of his specimens there was absolutely no change in the contour of the horns; he considered that in this disease there was an atrophic condition of the cells more purely; there is not an active inflammation, but simply a shrinkage and gradual disappearance of the cells.

DR. GIBNEY in closing the discussion, thought the absence of the cells and slight loss of contour sufficient to account for the great muscular changes. But upon this point he was not satisfied, whether the loss of function and tone would not of itself account for the disappearance of the cells and their shrinkage.

DR. SARAH J. MCNUTT, of New York, then reported

A CASE OF AN INFANT WITH MULTIPLE TUMORS OF THE CEREBRUM, PROBABLY OF SPECIFIC ORIGIN.

The history of the child was given in detail. Both father and mother were intemperate, but no specific history could be obtained. The cause of its last sickness was owing to exposure, the child having suffered from gastro-intestinal trouble for some time. The temperature rose to 104°, the patient dying from paralysis of the heart.

The autopsy revealed in the lower lobe of the left lung a caseous mass the size of two peas, bronchial glands enlarged and cheesy, the liver was filled with small yellowish-gray masses, the spleen also being affected in the same manner. In various portions of the brain lymph and pus were found. The arteries appeared thickened, and in the left ascending frontal convolution just beneath the surface were two caseous nodules the size of small marbles, which could be shelled out as though encapsuled. Similar nodules were found in the parietal and occipital lobes.

Dr. McNutt then described very clearly the lesions which we are apt to find at the post-mortems upon children dying from transmitted syphilitic affections, concluding that in the treatment of these cases we must rely upon mercury promptly exhibited; inunctions she considered had given the best results, as the gummata in children apparently belonged to the secondary instead of the tertiary stage.

DR. WILDER asked what was the composition of the nodules.

DR. MCNUTT replied they were vascular and filled with large round cells.

DR. G. BETTON MASSEY then read a paper on *The Cause of Electrotonus, and the Normal Formula of Polar Reactions.*

THURSDAY, JULY 22.—MORNING SESSION.

DR. JACOBY read the report of the Committee on

ELECTRICAL DOSAGE.

It stated that special rules for the application of electricity do not exist. Individual differences between patients and diseases make this impossible.

DR. GRAY believed that some thought should be taken of the substance of which the electrodes were made, and also as to their coverings, as it would make a great difference in calculations; again, with what the sponges are wetted would make a difference; the temperature of the water must be taken into consideration, his rule being to

use water as hot as the patient can bear. The question of a galvanometer should also be considered.

DR. LLOYD had felt a great deal of dissatisfaction in using electricity, especially in electro-gynecology, because he did not know what strength would produce certain effects; the area of surfaces making differences in the strength; the question to decide is how much current will produce a certain catalytic action; for instance, if you want to promote absorption of an inflammatory deposit in pelvic cellulitis or in stricture of the urethra, etc.

DR. WEBER stated that, so far as his experience went, an electrode, no matter of what it was composed, should be if possible square; he had discarded the use of oval ones. He thought the dosage of electricity an individual matter, and that no committee could lay down laws for its administration.

DR. MASSEY thought there should be a standard milliampère meter. He thought it desirable that the Society should purchase a good meter for the use of instrument makers, to be kept in New York City. He thought the committee had devoted too much time to therapeutics. The points to be gained are determinations in milliampères; for instance, how many milliampères are required to produce a contraction in a certain muscle. He had recently made some preliminary experiments in that direction with the cathodic closure and the anodic closure; he thought a certain number of observations on normal muscles were necessary to determine the number of milliampères required to produce a contraction.

DR. JACOBY, on behalf of the Committee, replied that he felt that the idea of the committee was lost to view. The committee was on dosage, not on galvanometers. The covering of electrodes did not enter into their consideration; Ohm's law covers that. If the resistance is increased, current strength must be increased. The reason why no particular galvanometer was recommended was because they did not care to recommend any particular instrument maker; all galvanometers have their objections; a selection must be left to individual choice. It would be a difficult matter to find a standard galvanometer; it would be difficult to find one remaining the same after a year; the best and most delicate he had ever used have changed; they are subject to magnetic influences. As regards the amount of current strength required to effect a certain result, if the committee were to inform the Association that a certain number of milliampères would cure a certain disease, it would be only individual experience. As regards the question of electrical dosage, he did not think absolutely normal muscles would give similar contractions. The recommendations of the committee are a plea for accuracy, to use the milliampère as has been done, but when you do describe the amount of current used, give the number of milliampères, and style of electrode used.

DR. AMIDON then read a letter from Dr. Fovel, of Zurich, and exhibited a photograph which he had sent of a

MICROCEPHALIC GIRL

who had three sisters also afflicted in the same manner, and who had since died. The parents were natural in appearance, and enjoyed good health.

DR. WILDER stated that he wished to avail himself of this opportunity to retract what he had said yesterday in relation to the brain of the Chinaman, as he had since had an opportunity of carefully examining the same, and thought it the most remarkable brain he had ever examined, although there was nothing to point to its Mongolian origin. It presented some remarkable features, and in a great many ways pointed to our ape ancestry.

DR. B. G. WILDER then presented some

NOTES ON THE BRAIN; AN ADDITIONAL CASE OF INDEPENDENCE OF THE PAR-OCCIPITAL FISSURE.

1. In his recent paper on the par-occipital fissure, he stated that among forty-three reliable specimens and figures accessible to him, the par-occipital was continuous with the parietal in twenty-one, and independent in twenty-two. The brain of a negro child at birth, lately prepared by him, had two fissures wholly independent on the right, and barely united by a shallow junction on the left side, the ental correlative of the occipital fissure in an early fœtus.

2. In a fœtus estimated to be about three months of age, opposite the occipital fissure there was a distinct ental ridge, so that the entire thickness of the wall was there folded. A similar ridge is figured by Tiedemann, but not named or described; that without further observations he could not determine as to whether it disappears in the adult or persists as a more or less distinct elevation, known as the bulbous cornu posterioris or eminenta splenalis. Even if transitory, it adds another to the list of fissures, including the calcarine, hippocampal, collateral, and Sylvian.

3. The fœtal extension of the proplexus is to the end of the post. cornu. This was the case in a fœtus estimated to be seven months old; the post-cornual extension is apparently in process of atrophy; there were indications of a like extension into the precornu. The extension might be expected in view of the great volume of the plexus at a still earlier stage.

4. Points illustrated by the transection of the fœtal brain. Six points of morphological interest were noted, most of them indicating that the thalami increase in width as development proceeds, so that in the adult human brain they form, or seem to form, part of the floor of the procœles or lateral ventricles, which is not the case in other mammals, excepting, perhaps, the primates.

DR. MILLS then presented the brain of a baboon and of a negro, sent by Dr. Formad, of Philadelphia, but time was not afforded for a careful examination.

DR. LEONARD G. WEBER, of New York, then read a paper

ON SOME AFFECTIONS OF THE NERVOUS SYSTEM ASSOCIATED WITH TUBERCULOSIS.

He remarked that in phthisis there is a condition of the mind in which cheerfulness predominates, but there is one, also, in which the most gloomy thoughts are indulged in, frequently ending in insanity, and it was of this latter that he wished to speak. He illustrated his remarks with clear and detailed histories of two cases. He thought that the indicated treatment partook somewhat of Dr. Mitchell's plan of treatment; but in these cases one difficulty would arise, which is to make them rest, as he thought it would be an extremely difficult matter to confine such patients to bed. He thought that

in those cases where mental aberration occurs, it is desirable to examine the lungs, as often the mental symptoms appear long before any positive diagnosis of phthisis can be made.

DR. GRAY remarked that these cases have puzzled him sometimes, so much so that he has sent his patients to a specialist in auscultation for an examination of the lungs. He thinks there is such a thing as tuberculous poison in the blood long before it produces organic changes. A case was quoted by him in which the mental symptoms predominated, and a consultation was called as to what really was the trouble. The patient dying, an autopsy was made, and evidences of tuberculosis discovered. He thought Dr. Weber had looked at the prognosis of these cases in a rather too despondent manner, as he knows of several cases which have recovered and enjoy excellent health. As to treatment, he agreed with Dr. Weber, and the point is to secure absolute restriction of all expenditure of energy, giving them the largest quantity of food they can take.

DR. WEBER replied that he was glad to hear hygienic measures emphasized, and also the great point of diet discussed; in Germany this is very fully realized, and he has himself, while visiting there, seen it carried out with excellent results.

DR. VAN BIBBER, of Baltimore, stated that he is in the habit of seeing a great many cases of melancholia, and that he makes a custom of always examining the lungs.

DR. PARSONS, of Sing Sing, New York, stated that he has had charge of a large number of cases of melancholia, and had noticed the frequency with which phthisis is associated with it; he has observed that frequently the disease of the lungs will run into the second, and even the third stage, without objective symptoms.

AFTERNOON SESSION.

A DECEREBRIZED FROG.

DR. WILDER exhibited a frog which he had decerebrized more than seven months ago. The wound healed perfectly, and the animal has enjoyed perfect health ever since; the operation was performed on December 9, 1885. A minnow or piece of fish is given to him twice a week, but it requires two persons to feed him, as one has to open his mouth and the other puts the food in, and here a curious phenomenon presents itself—if a piece of the minnow's tail projects from his mouth, the frog, while making an effort to swallow the fish, will, with his fore feet, endeavor to pull the fish out of his mouth. The movements of the frog also are superinduced, for after remaining in one position for some time, he will slightly change his position. If placed upon a convex surface and this be slightly revolved, he will endeavor to balance himself. Dr. Wilder sometimes, while carefully observing him, would notice that he would wink with only one eye, but when irritated he would wink both eyes. He also wondered whether the animal ever slept, as on the least jar, when apparently asleep, he would instantly open both eyes. (The frog was then fed before the meeting, and exhibited the phenomena described.) Dr. Wilder remarked that he would like to know if a frog under these conditions could be hypnotized. Just before coming into the meeting, while removing the frog from his box, one of his hind legs was accidently broken, but it does not appear to cause any inconvenience, and apparently no pain is felt. This frog also can be laid upon its back, and will remain there without the aid of mesmerism. The question also occurred to him whether this frog was capable of procreating his species.

DR. GRAY asked if he had ever hypnotized this frog.

DR. WILDER replied that he had not.

DR. MILLS thought it would not have that part of the brain requisite for hypnotization.

DR. SACHS stated that he was in Goltz's laboratory for some time and saw frequent exhibitions of frogs, but nothing was removed, the parts were simply severed. He thought Dr. Wilder's method more thorough, and was surprised to see the frog live so long. He then asked Dr. Wilder if he had ever put a block of wood in front of the frog and then irritated it, to see if it would jump over it or avoid the obstacle.

DR. WILDER replied he had not.

MR. JASTROW, of the Johns Hopkins University, stated that he had a series of frogs at one time: 1, normal; 2, the same as this one; 3, the optic lobes were also removed; 4, everything removed. He had found that the more brain tissue was removed the more readily would the frog remain upon its back. These frogs could also be etherized.

DR. WILDER remarked that where the parts were severed subcutaneously there might be a question whether union did not occur.

DR. ZENNER, of Cincinnati, stated that in the hands of some experimenters there had never been reproduction in the cord, but he did not know how it was in the brain.

DR. GRAY suggested applying a little acetic acid to one of the frog's legs, to see if he would try to brush it away.

DR. WILDER replied that he had not neglected to do so, and with the usual result.

MR. JASTROW said that he found a frog that had lost one leg, so he applied a little acid to its body. First the animal tried to brush it off with the sound leg, and afterward with the stump of the other.

DR. C. L. DANA, of New York, read a paper on

PSEUDO-TABES FROM ARSENICAL POISONING.

The object of his paper was to report two somewhat unique cases of arsenical paralysis, presenting the symptoms of tabes dorsalis; next to show that arsenical paralyses, like those from diphtheritic poisoning and alcohol, present two types, one of which might be called the mixed or ordinary form, and the other the ataxic form; and to show also, if possible, that the ordinary teachings that arsenical paralysis is due to a diffuse myelitis is not correct, and that these paralyses are really the result of a multiple neuritis. The conclusions arrived at were: 1. That a disease resembling locomotor ataxia may be caused by arsenic given medicinally, absorbed from wall papers, or taken in a single large dose. 2. That arsenical paralysis of this type and arsenical paralysis of other types are not due to a diffuse myelitis, as has been taught, but to a multiple neuritis. 3. That arsenical paralyses, like those from diphtheria, alcohol, and probably other infections and poisons, are of two types: *a.* The ordinary mixed, motor, and sen-

sory paralysis; *b*. the pseudo-tabetic form, in which there is no pronounced motor paralysis, but marked sensory troubles, especially ataxia.

DR. MILLS said that the subject of arsenical paralysis was one in which he was especially interested. The case which Dr. Dana mentioned, and which he had reported, was one of poisoning from Paris green, He had reported a series of cases. He thought that in these cases of metallic poisoning the true way to look at it was, not to regard it as a myelitis, neuritis, or myositis, but to regard it as a protoplasmic poisoning; that the poison, as the causative agent, affected the nervous protoplasm in varying degrees, according to circumstances; and, although Dr. Dana had asserted his reasons for regarding this disease as a neuritis, he regarded it as more extended. In the case just mentioned, other members of the family partook of the poison. One died with symptoms of encephalitis; one or two came near being permanently paralyzed; and others remained with symptoms of neuritis. This, he thought, indicated that a broader and better generalization should be made.

DR. SINKLER stated that he could recall some points in the case Dr. Mills mentioned. There was atrophy of the muscles of the upper extremities, atony of the bladder, marked reaction of degeneration, but he suffered no pain.

DR. MILLS thought the patient had suffered considerable pain, and that anodynes were used.

DR. JACOBY stated that he reported a case of lead poisoning in which the diagnosis was very difficult indeed. The diagnosis was pseudo tabes due to lead poisoning. He expressed the opinion that the ataxia was due to a lesion in the cord, but now desired to correct himself; if he had that case here, he would say it was multiple neuritis due to lead poisoning. The patient is entirely well now, he stated, with absolute return of the patellar-tendon reflexes.

DR. SACHS remarked that in speaking of these cases we called them arsenical and lead cases as though the symptoms were similar; these poisons have also been compared to the poisoning in diphtheria. Now we know that in infections the poison spreads to the most distant parts of the body: why should it not in these cases be peripheral as well as central?

DR. MILLS thought arsenical poisoning could produce a neuritis, myelitis, or cerebritis, or all of these together.

DR. DANA, in closing the discussion, stated that perhaps he had put his cases rather stronger than he intended, but the ordinary teachings are that arsenical poisoning produces a myelitis. The main point he desired to bring out was that there is a form of the disease resembling locomotor ataxia; he thought this should be known. Again, he wished to show that arsenical poisoning can bring about a multiple neuritis.

DR. SINKLER read a paper on

THE TREATMENT OF FACIAL SPASM.

He entered at length into the results which had been secured by others in these cases, quoting an interesting case that had came under his observation, in which the biceps of the right arm was affected. All the teeth upon the right side of the mouth were removed, but no relief resulted. Gelsemium, cannabis-indica, quinine, eserine, nitro-glycerine, and electricity were used, but without any marked result; in fact, the pain now extended to the right thigh and leg. The operation of stretching the facial nerve was decided upon after consultation. From the date of the operation up to the present time, there had been no spasm. The force used in the stretching of the nerve was estimated to be about twenty-five pounds. He had seen the patient some four weeks after the operation; the right side of the face was palsied; she could not shut the right eye, and the corner of the mouth hung down; but the patient assured him she was willing to remain that way rather than return to the former terrible twitching. He thought in this case the disease was of peripheral origin, and that in these cases, after therapeutic measures have failed to relieve, the operation of stretching should be performed without any unnecessary delay.

DR. MASSEY remarked that he saw a case a few days since which had been brought to him a year ago; at that time he applied the galvanic current, and during the following year the patient had been entirely free from pain.

DR. DANA thought that statistics were rather fallacious, also that some cases might get well with a slight operation, or perhaps none at all. It must be taken into account that the case mentioned by Dr. Sinker had only been operated upon four months ago.

DR. E. D. FISHER, of New York, made some

REMARKS ON EPILEPSY,

enumerating the various phenomena occurring during convulsions, relying chiefly upon the use of the bromides for the relief and cure of the disease.

DR. SACHS, of New York, read a paper entitled

INTRACEREBRAL HEMORRHAGE IN THE YOUNG.

After referring to the increased attention neurologists were paying to the cerebral accidents of children, the writer recorded his conviction that intracerebral hemorrhage is more frequent in children than is generally supposed, and that many cases of this sort are classified under the head of meningeal hemorrhage. Dr. Sachs then reported two cases of intracerebral hemorrhage; one in a boy two and a half years of age, and the other in a young man of nineteen years. The first case was given in full, in order to place the diagnosis upon a firm basis. The child had typical right hemiplegia with aphasia, without coma convulsions at the time of onset. The onset was slow, aphasia setting in first, paralysis of the arm and leg some hours later. The recovery was typical of that which takes place in many cases of adult hemiplegia from apoplexy.

The writer gave the reasons why he held that in this case the apoplectic attack was due to hemorrhage rather than to embolism or thrombosis. As regards the differential diagnosis between meningeal and intracerebral hemorrhage, the lack of convulsions seems to be of unusual significance. In meningeal hemorrhage convulsions are invariably present, and their absence might argue, other things being equal, in favor of intracerebral hemorrhage. In the second case the young man had had two apoplectic attacks exactly one year apart. The histories of these attacks were very similar to the one given in the first case. In the first mild attack all symptoms developed and receded typi-

cally; in the second attack the onset was slow, there was coma lasting for over eighteen hours, and recovery is not yet complete, contraction having set in in the affected arm. No convulsions at any time. There was no specific history.

Using these two cases as a basis, the author of the paper entered upon a discussion of the changes in the walls of the cerebral arteries, permitting an effusion of blood into the brain substance. Autopsies on this condition are very scarce, but there is good reason for supposing (reference was made to some recently reported cases of Dr. Osler) that miliary aneurisms occur in young children, and that fatty degeneration of the cerebral arteries, permitting transudation of blood through the vessel-walls (Recklinghausen), is a not infrequent condition.

Discussion was invited on the following points:

1. Frequency of intracerebral as compared with meningeal hemorrhage in young persons not the subject of specific disease.

2. The value of convulsions as a factor in differential diagnosis.

3. Pathological changes in the walls of the cerebral arteries in the young.

DR. MILLS thought that intracranial hemorrhage occurs in the young more frequently than is imagined. He had made three autopsies in children from the same family, dying within a few days after birth. He found extensive meningeal hemorrhage in one case.

DR. LLOYD then reported two cases occurring in young men, one eighteen years of age and the other younger. In one case it followed close upon an attack of diphtheria. In the other, the patient complained of not feeling well in the morning, and was compelled to go back to his bed. When Dr. Lloyd saw him he had passed into coma, with convulsions on the right side of the body. The patient was a confirmed inebriate. When first seen, coma and convulsions had set in, waves of spasm sweeping over the paralyzed side; there was also extreme lateral deviation of the eyes; right facial paralysis, face being drawn to the left side. He was a little puzzled about the case, as he did not expect to find a confirmed drunkard at the age of eighteen years. The boy died in a few hours, and the case had to be handed to the coroner. At the autopsy there was absolutely nothing found which would account for the conditions mentioned.

DR. ZENNER thought that in these cases it was difficult to tell, except by the autopsy, whether it is hemorrhage, thrombosis, or embolism; he considered that mere symptomatology is not sufficient in these cases for a diagnosis to be based on.

DR. MCNUTT spoke of a case in which there were convulsive movements on one side of the body, and also of the face. At the post-mortem the brain was examined very carefully, but there was simply œdema of the brain; there was no hemorrhage on either side of the brain.

DR. AMIDON thought the lesion might occur in the circulatory apparatus, more especially the arteries. The most natural thing to look for, he thought, would be miliary aneurism, as remarked by Dr. Sachs, although he was inclined to think that was a disease of adult life. He had seen pathological specimens where the aorta was narrowed, the patients dying very suddenly from intercerebral hemorrhage. Barié has reported twenty-seven cases in which he states that the disease is almost always below the origin of the left subclavian artery; some of the patients previously suffered from vicarious menstruation or epistaxis.

DR. SACHS called attention to the fact in regard to prognosis; he thought it made a great difference whether the child suffered from convulsions or not.

DR. ZENNER, of Cincinnati, presented a case of

AUCTIONEERS' CRAMP,

remarking that it came under that large group of cases termed professional neuroses, which generally affected the muscles of the extremities; but in this case the muscles of the face only were involved, mainly, if not entirely, those of articulation; and, so far as he knew, nothing similar had been reported, and therefore he thought it of great interest to the profession. He then gave the following history:

Patient a male, forty-five years of age, of good family history, had always enjoyed excellent health, following the occupation of an auctioneer. In March, 1885, was confined to his house for a month with an ulcer upon one of his legs. During that time he enjoyed good health, with that exception. He had been an exceptionally busy man, calling sales from morning until night, often refusing to leave the sale to obtain his lunch. After recovering from the ulcer and resuming his calling, he noticed, at the first sale which he cried, that he had some difficulty in his articulation, but it was not such as to cause him to desist from speaking. After three or four successive sales, during which time the difficulty kept increasing, he was compelled to abandon his business entirely. He now began to notice occasional slight difficulty of articulation in ordinary conversation, and also some subjective symptoms, consisting of a sense of fatigue of the muscles upon the left side of the mouth after talking, a sense of throbbing, and a dragging sensation at the left corner of the mouth. Dr. Zenner saw him about a month after these symptoms were first felt. At that time there was considerable general nervousness shown; further than this there has been no symptoms of disease, his general health being excellent. His weight is about the same, appetite fair, and sleeps well; general motility, on application of electricity, normal, as are also the tendo-reflexes.

He then presented the patient and drew attention to the fact that when the face was in a state of rest there was a certain increase of depth of the nasal fold, and a drawing-in of the left corner of the mouth which was due to a tonic spasm; the patient also felt a certain sense of pressure there, as though the cheek were pressed against the teeth. In ordinary conversation the contractions of the muscles are scarcely visible—in fact, some of his acquaintances have not noticed anything abnormal. He then requested the patient to call five rapidly as in calling a sale; on the rapid repetition of the word the contraction of the muscles upon the left side of the face was very marked, these being tense like a rigid band, while the right corner of the mouth was drawn upward, making it almost appear as though the contraction of the muscles was upon the right side of the face, while the left, to an ordinary observer, would appear almost normal; the patient also complained of a sense of very painful

fatigue on left side of face. The orbicularis oris in this case seemed to be the muscle principally involved, but other muscles were somewhat affected. He also stated that the patient himself discovered that by putting the end of a pencil under the lip and pushing it upward to relieve the tension, he could articulate much better (this effect was proved by the patient before the meeting). In this case he applied electricity, massage, and manipulation, the muscles responding to the current as promptly upon one side as the other. But this treatment had effected no very satisfactory results as yet.

DR. WILDER remarked, that from where he was sitting, the difficulty seemed to be upon the right side of the face.

DR. JACOBY stated that the same idea had occurred to him.

DR. VAN BIBBER asked whether the patient had ever had any previous affections of the face or ears.

DR. ZENNER replied that he had not, and that the first thing the patient noticed was a slight heavy aching feeling in the left corner of the mouth, which had gradually increased. He thought that the muscles of the affected side being brought so constantly into action by one continual effort might account for the condition of subjective symptoms presented. Poore, in his analysis of seventy-five cases of writer's cramp, speaks of the neurosis being due to a persistent activity of certain muscles where the act of prehension is brought into play, and somewhat resembles this case in requiring an effort differing from ordinary conversation. The patient himself has never accepted the fact that his calling of sales has produced his difficulty, but rather attributes it to having taken cold while confined to his house for that month, as he was in the habit of sitting by an open window. Dr. Zenner did not dispute that there might be some other element involved. He concluded that although he had administered the iodides, electricity, etc., he thought that if these were pushed a little further, together with more thorough application of massage and electricity, and no better results secured, it would be advisable to resort to stretching of the facial nerves of the left side.

DR. JACOBY asked how drinking affected the patient.

DR. ZENNER replied there was no contraction unless an effort was required.

DR. JACOBY asked whether there was any specific history.

DR. ZENNER replied there was none, so far as he had been able to learn.

DR. L. C. GRAY inquired whether he had been examined with the ophthalmoscope.

DR. ZENNER stated that he had sent him to a specialist for that purpose, and there was nothing abnormal in that respect.

DR. GRAY then asked whether, on examining him with galvanism, any difference was observed in the contraction of the muscles.

DR. ZENNER replied not in the orbicular oris, to which he had specially directed his attention.

DR. LLOYD asked whether the patient suffered from vertigo.

DR. ZENNER replied he did not.

THE PRESIDENT remarked that the case was one of extreme interest, and that he was inclined to regard it as a professional neurosis. He cited a case in which he had been called in consultation by Dr. C. H. Turnbull, of Philadelphia, to see an actor who was compelled, in his part, to distort his face to a peculiar expression requiring great effort; the result of this effort was followed by double vision, which at last compelled him to seek Dr. Turnbull's advice. He was then suffering from paralysis of one of the recti muscles. There was one peculiarity, and that was that with an increased voluntary effort the patient could draw the affected eye into its normal position.

DR. MILLS thought cerebral exhaustion was a factor in this case, and stated that although this condition lasted some time, the patient had almost recovered. He also thought this patient of Dr. Zenner presented some of the appearances of secondary contracture, the case presenting symptoms which he had observed in cases of peripheral neuritis, and which had spread and involved a large part of the muscles of the face. He thought the line of treatment suggested by Dr. Zenner very good: rest to the parts, and an endeavor to restore nutrition, being most desirable. He also thought that if recovery was delayed under these conditions, stretching of the nerve should not be postponed too long, that it was distinctly indicated when other means failed.

DR. GRAY remarked that it would require a most careful examination by the electric current to form a differential diagnosis, but he had thought there was a difference of power of the two sides while making his examination, and that the patient was paralyzed on one side of his face, and that there was a difference in the closing of the eyes, also while closing his lips upon his fingers it occurred to him that there was loss of power upon the left side.

DR. GRAY then asked whether his tactile sense was perfect.

DR. ZENNER replied that it was.

DR. WEBER remarked that the case did not seem to start as a neurosis, and that the contraction of the muscles seemed to be more clonic than tonic; this, to to his mind, was more secondary, as this is often found in post-hemiplegic conditions. He thought, as had been remarked, that galvanism was indicated.

DR. ZENNER, in closing the discussion, stated that he would not deny that there was neuritis present, though there was no direct evidence of it. He had not pretended to say what is the exact seat or nature of the disease in the patient. In most cases of professional neuroses the nature of the disease is altogether obscure, probably there may be a different pathological basis in different cases. In a number of cases of writer's cramp neuritis appeared to be the cause. But that his own case was properly classified with professional neuroses, was based upon the features peculiar to almost all such cases: first, that it seemed to have as its cause the excessive use of the affected muscles; secondly, that the peculiar symptoms were brought out in each instance only when those muscles were brought into play by a voluntary act.

When he attempts to repeat a word rapidly there is a rigid contraction of the muscles at the left angle of the mouth, pressing it firmly against the teeth, and at the same time some of the muscles on the right side contract, though much less forcibly, pulling the mouth toward the right side. The elevator muscles of the left upper lip alone take no part in the spasm, so that it appears as if there were paralysis of that side of the face,

and the face was merely drawn to the other side. But the patient revealed that there was no paralysis of these muscles by exposing the upper and lower teeth, by moving the mouth to one side and the other, all of which was as well done on the left side as right. The strength of the elevator muscles of the left upper lip was further shown by the patient's holding the lip elevated while the examiner made forcible and persistent effort to pull it down.

The speaker had repeatedly examined the patient for paresis of some of the muscles, which is often the basis of spasms of various kinds, in cases of writer's cramp as well as other kinds of spasm, but has never been able to detect any marked weakness of any of the muscles.

FRIDAY, JULY 23.—MORNING SESSION.

DR. WILDER exhibited a beautiful specimen of

A MEDIAN SECTION OF THE HEAD OF A MURDERER INJECTED WITH ALCOHOL,

and remarked that the features of the brain which was thus hardened and exposed *in situ* are to be discussed at a future meeting, in comparison with the brain of another murderer. The specimen was an illustration of the value of the method of continuous arterial injection with alcohol which has been applied to other heads, to brains, and to entire bodies, in the anatomical laboratory of the Cornell University. The main features of the method are: *a.* Reception of the head within twenty-four hours after death. *b.* Preliminary washing out of the vessels with chloral, to which perhaps weak alcohol might be preferable. *c.* Continuous injection of alcohol for a week. *d.* Continuity secured by a pressure of eighty millimetres of mercury, which was afterwards reduced to forty millimetres, when the flow became somewhat free. *e.* Gradual increase of the strength of the alcohol from sixty-five to ninety per cent. *f.* Maintenance of a low temperature, 8° to 11° C. *g.* Accurate division of the head with a fine saw acting in a mitre box. *h.* The small cost; the injected alcohol represented forty-one and a half litres and ninety-five per cent., but about two-thirds was regained, so at three dollars per gallon it would not cost eleven dollars, and at seventy-five cents (free of tax) only three dollars.

DR. MILLS stated that he did not, ordinarily, care to use alcohol for the preservation of specimens for gross study, but used in this way it might be different in its results.

DR. AMIDON remarked that a little corrosive sublimate put in the alcohol might secure still better effects.

DR. MILLS asked whether there would not be great difficulty with a brain preserved in this manner in separating the pia mater from the surface of the brain; whether the brain would not be considerably torn. The old method was to put the brain in a solution of chloride of zinc; the membranes could then be readily stripped off in a few days, and weak alcohol afterwards used.

DR. WILDER replied that the question of Guiteau's brain could have been more fully discussed if it had been hardened in the skull; and he felt this very desirable in order to preserve its shape. He hoped to combine with this process the preservation of the brain. so that the gyra and fissures could be studied. He has been preparing brains for the museum of the Cornell University for some years, and has found alcohol to answer all requirements for the purpose of microscopical examinations. He insisted also that the brain should be in the dura—in its own bag, so to speak; then hanging the brain over a pail by the dura, injection with alcohol is commenced, the brain then immediately fills the dura as though it were in the skull, and no pressure upon any one point exists.

DR. JAS. H. LLOYD, of Philadelphia, read a paper on

MORAL INSANITY: A PLEA FOR A MORE EXACT CEREBRAL PATHOLOGY.

It was devoted to a criticism of those who—in the manner referred to by Locke in his "Essay Concerning Human Understanding"—confuse in their psychology the *power* with the *agent.* They personify the "faculties," and regard them as distinct agents, each with its own province and powers. This method is inherited from the philosophers, and was shown to have produced the artificial distinctions between "mind" and "brain," and to have worked confusion, especially in the Scotch school, in the use of such terms as "consciousness" and "idea." The alienists in their writings have not escaped these errors, and many of the artificial distinctions, classifications, and symptomatologies which abound in the books are distinctly traceable to them. Brief allusion was made to the definitions and tests which have been promulgated in the courts, and are found in the writings of Coke, Hale, Blackstone, Shelford, and Chitty. To these we are indebted for such distinctions as "civil and criminal," and "partial and total" insanity. Also to such tests as *delusion* and *knowledge of right and wrong.* These were all shown to be more or less artificial and incomplete from the very standpoint of Locke's criticism—*i. e.*, they ignore the individuality of the brain as one acting *substance*, and grant to the faculties, or several activities, of the cerebral organ each its own autonomy, and its own disorders and diseases. They erect one symptom into a whole disease, and insist upon the presence or absence of this as a test.

The writer proceeded to an examination of the claims of so-called *moral* insanity, as presented by some of the most advanced medical psychologists. This claim proceeds upon just such an abstraction as the reader was cautioned to avoid. It presupposes a distinct moral faculty, which may remain undeveloped in a mind intellectually normal, or may become diseased without affecting the other faculties. This was almost the worst form of abstraction and personification that had appeared in psychology. It is impossible to conceive of a *moral* or *emotional* act of mind which does not include the so-called *intellectual* faculties. In fact, in these acts it is the cerebrum taking on only different (and rapidly changing) modes of action. To say that it is diseased in one of these modes and not in the other, is a sophism. It is more nearly correct to say that in an insane man it is the whole mental (cerebral) act—memory, judgment, emotion, and will—which is wrong, as these are all but *modes of action* of one diseased substance, the cerebrum. More careful analysis would prove this in the cases which are cited in the books as "moral imbeciles," and which include evidently such diverse types as hysteria, katatonia, paranoia, imbecility, melancholia, and even delusional insanity. The subject has importance because it is often relied upon to acquit a certain class

of lunatics in the courts, and almost invariably proves to be a broken reed to him who leans upon it. The paper closed with a reference to the labors of the experimental physiologists, especially Ferrier, who have demonstrated the localization of many sensory and motor areas. It is not possible for them to demonstrate the localization of "judgment" and "emotions." These are phases of all cerebration, and, as Ferrier distinctly states, exist both in the sensory and motor regions.

THE PRESIDENT stated that he had great respect for the metaphysical and practical knowledge of Dr. Lloyd, but he must differ with him on some points; though, perhaps, it might be differences upon terms or expression rather than facts. He did not see what was to be gained by carrying out of the ideas as expressed by Dr. Lloyd in regard to nomenclature and classification. In using such terms as monomania, paranoia, and coming to kleptomania, or typhomania, and even some of those small forms of so-called phobias, we do it understanding what we are doing, but we do it as a matter of science and study. Again, Dr. Lloyd remarked we did not bring forth the cases to prove the propriety of the use of such terms. He thought the writer might not be thoroughly acquainted with all the cases produced in literature which led us to have a right to say that there are cases which deserve this designation of moral insanity. Men who have advocated the term moral insanity are perfectly well aware that in every case, unless it is where there exists general paralysis, physical and mental, there is also exhibited mental impairment. The cases to which should be applied this term, "moral insanity," are cases which have all through life exhibited a preponderance of moral defect, a decided evidence of moral impairment, though in many cases one may find but little intellectual impairment. He agreed with Dr. Lloyd that the term had been used indiscriminately, and had been made to cover cases of hysterical insanity, katatonia, etc. He thought that while paying tribute to Dr. Lloyd's scientific and and literary abilities, an acceptance of his ideas would rather retard than aid the advance of science in this direction.

DR. GRAY remarked that there are three classes of insanity, mania, melancholia, dementia; all other forms being simply forms or degrees of these. He did not see how we were to do away with the term, as it is an extremely difficult matter to draw the line sharply; but still we should know what it means and understand it.

DR. PARSONS thought the laity objected to it because it embraced so many forms of the disease, it may mean emotional or wicked insanity. But in speaking of a man as having a diseased liver, we do not mean to say that he is not sick. His views, he thought, had been well expressed by Drs. Gray and Mills.

DR. MILLS said he would like to ask a few questions: First, whether in discussing the question of insanity we have any right to use such terms as moral and immoral insanity. If so, in what sense should they be employed? Do not those who see cases of insanity frequently see those who present overwhelming predominance of moral or immoral phenomena? In a case, the trial of which lasted four weeks, the man being what we would term a delusional monomaniac, he plead his own case before the court, and the jury declared him sane. There was little or no immoral effect in this man's case; one could not use those terms.

DR. GRAY asked why we could not have localization in regard to the actions of the mind; if we can have mental symptoms by impairment of localized areas, why can we not have localized insanity by impairment of these areas?

DR. LLOYD, in closing the discussion, remarked that he had in his paper already answered the questions on the subject of moral insanity; that it was something more than mere difference in terms. As to our courts, we should not despise them; they have a right to expect that a physician should express himself intelligently. In the case of a man killing his wife after years of happiness and affection on either side, he may say he killed her because he loved her; his brain is affected, his mind, his intellect is affected. It is, as was said in the paper, a mere word differentiation, it is not a differentiation of things. As to the subject of paranoia, it is a congenital defect of the mind, it comes from the mother's womb, it is hereditary.

DR. JACOBY presented, for Dr. Rudisch,

A NEW PORTABLE BATTERY,

the chief point being that the cells containing the fluid can be left at home and the zincs and carbons replaced in the box. A current can be obtained from them after being once charged at the end of four weeks. Between the carbons and the zincs a piece of stout asbestos paper is fastened by means of a few thin rubber bands. The fluid used in the battery is composed as follows: sal ammoniac, one and a half pounds, add six pints of water. The asbestos paper retains in its pores a large amount of moisture, acting as a large voltaic pile.

A resolution was adopted approving of the proposed

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS,

and the following Committee of Conference were appointed: Drs. L. C. Gray, of Brooklyn; J. Van Bibber, of Baltimore; W. Sinkler, of Philadelphia; E. C. Seguin, of New York; and Philip Zenner, of Cincinnati.

Adjourned.

NEWS ITEMS.

DEATH OF PROF. WILLIAM RIPLEY NICHOLS.—Prof. William Ripley Nichols, a chemist well known in this country, died at Hamburg, Germany, on Wednesday, July 14th. He had been in poor health for the last four or five years, having been affected during that time by a peculiar disease of the lungs, which developed itself suddenly. He was Professor of General Chemistry in the Massachusetts Institute of Technology. He was one of the earliest graduates of the Institute, his class (that of 1869) being the second to leave its walls. He was the author and compiler of several admirable text-books. He was about forty years of age. As a chemist his work in water analysis was well known.

DEATH OF DR. WILHELM FROBELIUS.—The death is announced, in the Russian papers, of Dr. Wilhelm Frobelius, formerly a great ophthalmic surgeon in St. Petersburg. When ophthalmoscopy was in its infancy, Dr. Frobelius wrote largely on the subject, and he was the first to perform iridectomy for glaucoma in St. Petersburg in 1857. He was appointed inspecting offi-

cer to the foundling institutions in 1864, and gathered under him a number of young subordinates of great ability and scientific attainments, who have rendered the greatest service to the important establishments committed to their charge; he obtained the appointment of a prosector, the first of these officers in the country. He also established, as early as 1868, an institution in St. Petersburg for calf lymph vaccination.

THE NEW IOWA STATE BOARD OF MEDICAL EXAMINERS met recently and adopted rules for granting certificates, and a schedule of minimum requirements of medical colleges to secure recognition, was adopted. A list of nearly three hundred medical schools was adopted to be recognized by the Board. Nearly one hundred colleges were refused recognition. Certificates will be refused upon failure to present a diploma from a recognized medical college, failure to submit the proper affidavits, or, upon examination, to answer correctly eighty per cent. of the interrogatories propounded. In all cases recommendation of good moral and professional standing must be given. The Board held meetings in other parts of the State, beginning at Dubuque, July 29, Mason City, Fort Dodge, Sioux City, and Council Bluffs, stopping two days only at each place, when examinations will be had and applications received for certificates, and diplomas verified. These meetings are held for the convenience of physicians in different parts of the State. All midwives in the State are required to conform to the same rule as physicians, and secure a certificate to practise.

UNWHOLESOME CANNED PEAS.—The Health Board of Brooklyn has been looking into the healthfulness of French peas, and has condemned large quantities on account of injurious articles used in their preparation. The names of the brands which the Brooklyn authorities have decided to be unhealthy are the following; Henry Deler et Cie, Dandicolee et Gaudin, Bordeaux; J. Nouville, Bordeaux; Perry fils, A. Lazun, E. Estibal, Bordeaux; E. M. Daelzin, Bordeaux; D. M. Auzone, Bordeaux; L. Carpe et Cie, Lunéville; Soule et Prise, Bordeaux; F. Fitonaine, Bordeaux; John Moir & Son, London, Aberdeen, and Seville; Charles Julien, Paris; Barton fils, Fontaine Frères, Paris; G. Talbot, Bordeaux. These names are given, as it may be useful to know what particular brands are held to be unhealthful. Five hundred grocers in Brooklyn have been notified not to sell peas coming from these houses.

CONGRESS OF NATURALISTS IN BERLIN.—This year's assembly of naturalists and physicians in Berlin promises to be on a grand scale. It has been decided, says the Berlin correspondent of *The Lancet*, through the initiation of the German Colonial Association, to form a special section for Medical Geography, Climatology, and Hygiene, in which observations and personal experiences made in foreign countries, especially in the tropics, are to be discussed. The German Colonial Association has undertaken to make the necessary preparatory steps. Geheimer Medicinalrath Hirsch is the Chairman for the formation of such a section, the cooperation being secured of competent men, who, in the general interest, would be willing to assist personally at these discussions. The following are the subjects which will occupy the attention of the section: 1. Acclimatization in general: (*a*) The fitness for acclimatization of special races; (*b*) Hygiene of the white races in the tropics. 2. Education; capability of training the natives to work. 3. Sanitary and educational statistics in respect of German colonies and dominions under German protection. Professor Waldeyer, chief of the Anatomical Section, has proposed the appointment of a special session for discussing the subject of Gastrula of the Vertebrata, and offers to introduce the debate by a short report on the results of discoveries up to the present time. Professor Hartmann will conduct the investigation of the anatomico-zoötomical collections, for which the building of the old Exchange has been chosen.

PREHISTORIC DENTISTRY.—Dr. Marter, of Rome, has for some time past been devoting considerable time to examining the skulls in the various museums in Italy, and in Etruscan and Roman tombs, and he has given an account of his investigations in the *Independent Practitioner*. In the ruins of one of the Etruscan tombs, about the date 500 B. C., he found a partial denture. It was an arrangement for holding in position three upper artificial teeth by banding them to the adjoining natural teeth. These teeth were carved out of some large animal's tooth. Another denture found in an old Roman tomb consists of two natural teeth fastened by means of soft gold bands to the contiguous teeth. The most recently opened and oldest Etruscan tomb yet discovered in Italy was lately excavated at Capadimonti; this tomb belongs to the sixth century B. C., and amongst several articles of jewelry a denture, very similar to those above described, was found. Dr. Marter was unable to discover any stopped teeth, although many cases of caries and other dental diseases presented themselves. It is certain that dentistry must have been extensively practised in the early history of the world, and that gold must have been used largely; otherwise the early Greek or Roman legislators would not have mentioned the matter in the celebrated laws of the twelve tables. Law 5th, de Jure Sacrorum, is as follows: "Quoi auro dentes vincti sicut in cum ollo sepelire, se frande esto."

TRINITRINE.—This term has been adopted on the Continent in prescribing nitro-glycerine, that nervous patients may not be alarmed by reading the latter word.

LOBELIA INFLATA: NEW ALKALOID.—Herr v. Rosen, of the University of Dorpat, finds two alkaloids in the lobelia inflata, one a liquid, lobeline, the other a crystalline solid. The latter was found to resemble apomorphia in its emetic characters.

ARSENIC IN SKIN DISEASES.—The Editor of the *Journal of Cutaneous and Venereal Diseases* is desirous of ascertaining to what extent arsenic is used by American physicians in the treatment of skin diseases, and also the results of their experience as to its therapeutical value.

Information upon the following points is requested of every physician who reads this:

Are you in the habit of employing arsenic, *generally*, in the treatment of skin diseases?

In what diseases of the skin have you found arsenci of superior value to other remedies?

What ill effects, if any, have you observed from its use?

What preparation of the drug do you prefer, and in what doses do you employ it?

Address, Editor of *Journal of Cutaneous and Venereal Diseases*, 66 West Fortieth Street, New York.

THE BRITISH MEDICAL ASSOCIATION will hold its fifty-fourth annual meeting at Brighton next week, under the presidency of Dr. Withers Moore, of Brighton. The Address in Medicine will be delivered by Dr. John S. Billings, U. S. A., and, by special arrangement, will appear in our columns of next week.

THE CHOLERA IN JAPAN.—Since the first appearance of the cholera in Japan this year, and up to June 20th, there have been 10,276 cases of the disease, 7803 of which have been fatal. The average death-rate per 100 has been 75.93. The total number of cholera cases which occurred throughout the country, from August 23d to November 30th, last year, was 11,927, of which 7152 proved fatal, the death-rate being 59.96.

FANCY-BRED RABIES.—An English writer, Crawford, is authority for the statement that an American named Stephens, to test his theory that hydrophobia is fancy-bred in man, never loses a chance of getting bitten by a mad dog. He has been wounded by canine teeth forty-seven times, and a German named Fischer, who is his disciple, nineteen times. As there is certainly such a disease as simulated rabies, he advises some society for the diffusion of useful knowledge to scatter broadcast the small volume on "Le préjugé de la Rage," by Fangère Dubourg, and what was written on this subject by such lights of science as Bouley, Brechet, Tardieu, Majendie, Boudin, Vernois, Sausen, Renault, Donnat, Baron Portal, and Dupuy.

ILLEGAL PRACTICE OF MEDICINE.—In Troy, New York, there would seem to be an admirable opportunity for the enforcement of the existing statutes against the illegal practice of medicine. A certain Mrs. Hoyt, of that city, some time ago obtained a diploma from an institution known as the "American Health College," of Cincinnati, claiming, it is said, to be incorporated under the laws of Ohio, which authorizes her to practise the "vitapathic system of medicine," whatever that may be. She states that she was graduated from the college after an attendance of *eight weeks* upon its course of study, and that she also has a certificate from the institution authorizing her to perform the functions of a minister of the Gospel. Acting upon the powers conferred by the latter, it is asserted that she has already officiated at two marriages; but to what extent she has inflicted the "vitapathic system of medicine" upon the community has not transpired.

NOTES AND QUERIES.

INTERNAL AND LOCAL MEDICATION IN THE TREATMENT OF HERPES ZOSTER.

DURING the past year and a half there have come to my notice, at various stages of the disease, a number of cases of herpes zoster, and as the following method of treatment has given very gratifying results, it occurred to me that it might be of interest to your readers. The treatment consists briefly in the administration of a blue pill (two or three grains) twice or three times during the day, and the local application of zinc ointment carbolized (two per cent.), the parts being also protected from irritation of the clothes and other external influences. In every case so treated the pain ceased and the eruption was controlled in the course of a day or two, or after the purgative effects of the drugs had disappeared, the vesicles drying up, leaving brownish crusts, the latter dropping off in the course of a few days. J. B. S.

THE HYPERÆMIA OF HOMATROPINE.

To the Editor of THE MEDICAL NEWS,

SIR: In the issue of THE MEDICAL NEWS of July 24, in speaking of homotropine hydrobromate, Dr Jackson says he believes the hyperæmia produced by this drug to be due to a specific influence of the drug on those vessels through which it makes its way to the general circulation, and that the same occurs after atropia. . . . To prevent the unpleasant irritation produced by homatropine, I have been using a few drops of a two or four per cent. solution of cocaine. It seems not only to prevent the conjunctival hyperæmia, but also to increase the action of the homatropine. In the hyperæmia produced by atropine, cocaine had no effect. In my experience atropine produces palpebral as well as ocular hyperæmia, and often facial erythema. When once these symptoms are produced, at any time afterward the smallest quantity of the drug is sufficient to excite another attack; with homatropine this is not the case. Very respectfully,

J. M. RAY.

LOUISVILLE, KY., July 28, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT OF THE U. S. ARMY, FROM JULY 27 TO AUGUST 2, 1886.

BROWN, JOSEPH B., *Colonel and Surgeon.*—Retired from active service, July 26, 1886.—*S. O. 171, A. G. O*, July 26, 1886.

BENTLEY, EDWIN, *Major and Surgeon.*—Ordered for duty as Post Surgeon, Fort Davis, Texas.—*S. O. 92, Department of Texas*, July 22, 1886.

TAYLOR, M. K., *Major and Surgeon.*—Granted leave of absence for one month, with permission to apply for one month's extension.—*S. O. 77, Department of Missouri*, July 24, 1886.

GIRARD, JOSEPH B., *Captain and Assistant Surgeon.*—Granted leave of absence for three months, with permission to go beyond seas.—*S. O. 170, A. G. O.*, July 24, 1886.

ROBINSON, SAMUEL Q., *Captain and Assistant Surgeon.*—Ordered for duty as Post Surgeon at Fort Brown, Texas.—*S. O. 92, Department of Texas*, July 22, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING JULY 31, 1886.

LONG, W. H., *Surgeon.*—Granted leave of absence for fifteen days, July 30, 1886.

SAWTELLE, A. W., *Surgeon.*—To proceed to Portland, Oregon, and Port Townsend, Washington Territory, as inspector, July 26, 1886.

DEVAN, S. C., *Passed Assistant Surgeon.*—Granted leave of absence for ten days, July 26, 1886.

FATTIC, J. B., *Assistant Surgeon.*—Granted leave of absence for twenty-nine days, July 26, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 31, 1886.

LUMSDEN, G. P., *Passed Assistant Surgeon.*—To duty at Marine Barracks, Washington, for month of August.

CORDEIRO, F. J. B., *Assistant Surgeon.*—Ordered to Receiving Ship "Minnesota."

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course, not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*